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SEPTEMBER 23RD–29TH 2006 www.economist.com

Thailand's dangerous coup

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What America's left has got wrong

Russia bullies oil companies

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The dark side of debt

Why it matters that markets are going private

PRINT EDITION

Full contents
Enlarge current cover
Past issues/regional covers
Subscribe

GLOBAL AGENDA

POLITICS THIS WEEK

BUSINESS THIS WEEK

OPINION
Leaders
Letters

WORLD
United States
The Americas
Asia
Middle East & Africa
Europe
Britain
Country Briefings
Cities Guide

SURVEYS

BUSINESS
Management Reading
Business Education
Executive Dialogue

FINANCE & ECONOMICS
Economics Focus
Economics A-Z

SCIENCE & TECHNOLOGY
Technology Quarterly

PEOPLE
Obituary

BOOKS & ARTS
Style Guide

MARKETS & DATA
Weekly Indicators
Currencies
Big Mac Index

DIVERSIONS

RESEARCH TOOLS

CLASSIFIEDS

DELIVERY OPTIONS
E-mail Newsletters
Mobile Edition
RSS Feeds

ONLINE FEATURES
Cities Guide Go
Country Briefings Go
Audio interviews Go
Classifieds Go

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The World In
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European Voice
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Print Edition — September 23rd 2006

On the cover
Why it is worrying that the markets are going private: leader

Previous print editions

Sep 16th 2006
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Aug 19th 2006

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The world this week

Politics this week
Business this week

Leaders

Financial markets
The dark side of debt

Soldiers in power
Thailand's dangerous coup EP

Russian energy
Yukos revisited? EP

America's economy
Helping America's workers EP

Sweden's election
Voters of the centre-right, unite EP

Technology leapfrogs
Behind the bleeding edge EP

Letters

On Sweden, the London Stock Exchange, Donald Rumsfeld, airline safety, Japanese comics

Special Report

Thailand's military coup
Old soldiers, old habits

United States

National security
The uses of scare-talk

Charitable giving
The other Billanthropy

Muslims in Minnesota
Finding a voice

Urban renewal
Up in arms about the Yards

Food safety
Sickening spinach

Unions and politics
The limits of solidarity

Lexington
Poison Ivy

The Americas

Mexico's presidential election
The left cannot hold

Bolivia
Land battles

Alberta
Clever red-necks

Canada
Red coats with red faces

Correction: Albano Harguindeguy and José Alfredo Martínez de Hoz

Asia

China's unions
A little solidarity

Japan
Abe steps up

Taiwan
An internal affair

Kyrgyzstan

Technology Quarterly

Splitting the digital difference EP
Behold, the bus of the future EP
Pipe in the sky? EP
In the beginning was the word EP
A meaty question EP
Getting the internet on track EP
From hypertext to hypervideo EP
A rubbish business model EP
The writing on the wall EP
Gaming's next episode? EP
Visions of ecopolis EP
Computers that read your mind EP
An even brighter idea
Lighting up the world EP
Concrete possibilities EP
Secrets of the digital detectives EP
Mr BlackBerry sends a message EP
Offer to readers

Business

European telecoms
Swamp things

DaimlerChrysler
Goodbye, Dr Z

European trucks
Roadblocks

Semiconductors
Buying time

Cluster analysis
Blame it on the typewriter

Recruitment
Apply within

Fast food in America
Sizzling

Face value
China's pied piper

Special Report

The credit markets
In the shadows of debt

Finance & Economics

Hedge funds
Flare-up

Chinese brokerages
Hitting a wall

Chinese public offerings
Selling the family China

Buttonwood
Technical failure

New mortgages

A dope dupe

South-East Asia's refugees
A burden but also a boon

Middle East & Africa

Darfur
Will they be rescued?

Yemen
Leave your guns at home, and vote

Iraq
Slaughter in Baghdad

Zimbabwe
No democracy, no bread and butter

South Africa
The comeback kid

Correction: Burundi

Europe

The pope and Islam
When the heavens open

Sweden's election
Reinfeldt explained

Berlin
Poor but sexy

Britain, Spain and Gibraltar
Between a rock and a hard place

Cyrillic
Letter writing

People-trafficking in Odessa
Sea of tears

Transdniestria and smuggling
Easy money

Charlemagne
Hungarian dances

Britain

The armed forces
No more missions, please

Court martial
Branded

The wages of football
All bunged up

Christianity
A new Jerusalem

Muslim converts
Islam's makeover

Politics
Testament of youth

Teaching mathematics
Out of school

Bagehot
Still in the game

Articles flagged with this icon are printed only in the British edition of *The Economist*

Collateral thinking

Economics focus
Dolling up the dole

Science & Technology

Epigenetics
Learning without learning

Evolution and diet
Bitter consequences

Palaeometeorology
Running rings round storms

Palaeoanthropology
Lucy's daughter

Books & Arts

Religion
Misbegotten sons

Conservation and feminism
African greenheart

Kosovo
Time for a reckoning

The second world war
Moscow mourning

New fiction
Confused in Congo

London theatre
Chin up, Kevin

Obituary

Oriana Fallaci

Economic and Financial Indicators

Overview

Output, demand and jobs

Prices and wages

Output gaps

Money and interest rates

The Economist commodity price index

Stockmarkets

Trade, exchange rates and budgets

The Economist industrials index

Emerging-Market Indicators

Overview

Economic freedom

Economy

Financial markets

Advertisement

Classifieds

Jobs
Head of Economic Affairs
The European Mortgage Federation is the voice of the housing finance industry at the ....

Business / Consumer
WSI Internet - Start Your Own Business
Business Opportunity - WSI Internet Start Your Own Busines....

Tenders
WSI Internet - Start Your Own Business
Business Opportunity - WSI Internet Start Your Own Business! Profit....

Jobs
Lead Economist
The Social Protection and Labor Sector (HDNSP) contributes to The World Bank's mission of pov....

Tenders
Managing Risks in the Recovered Fibre Market
Invitation to Tender WRAP (the Waste & Resources Act....

Jobs
Directors
DFID, the Department for International Development: leading the British government's fight against ....

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Politics this week

Sep 21st 2006
From The Economist print edition

Reuters

The leaders of **Thailand's** (bloodless) military coup gave assurances that a new prime minister would be named shortly and promised new elections within a year. A military junta seized power after months of political limbo following April's contentious general election. Thaksin Shinawatra, who had retained the post of prime minister, was in New York at the time of the coup. He was told he was welcome to return, but could face corruption charges. See article

Shinzo Abe was virtually assured of becoming **Japan's** next prime minister after the ruling Liberal Democratic Party chose him as its leader. Although a protégé of Junichiro Koizumi, who steps down at the end of this month, observers have questioned Mr Abe's commitment to a reform agenda. See article

A suicide-bomber riding a bicycle killed four NATO soldiers in a district of southern **Afghanistan**, one day after the district had been declared free of Taliban insurgents. Britain's defence secretary admitted that battling the insurgents was “harder than we expected” and urged NATO countries to respond to a request for 2,500 extra troops.

No, sir, Mr President

The White House and Senate leaders sought a compromise on **interrogating terrorist suspects** after a mini-revolt by leading Republicans, including John McCain. The rebels backed legislation to bring America more in line with the Geneva Conventions. George Bush, in a testy press conference, warned he would shut a CIA interrogation programme if he didn't get his way.

The **Nuclear Threat Initiative**, a private charity, offered $50m (if others stumped up a further $100m) from Warren Buffett to create a nuclear fuel bank run by the IAEA, the UN's nuclear guardian. The aim is to encourage countries to buy civilian nuclear-reactor fuel, rather than make their own using proliferation-prone technologies.

California launched a lawsuit against six carmakers for the impact of vehicle emissions on climate change. Although carmakers have been sued to force a reduction in emissions before, this is the first time that a state has sought damages for the consequences.

Street rage

Reuters

Hungary's capital, Budapest, was hit by successive nights of riots and car-burnings as protesters took to the streets after a leaked tape revealed that the prime minister, Ferenc Gyurcsany, had misled them about the state of the economy. Mr Gyurcsany was quoted as saying, before his Socialist Party won re-election in April, that “we lied morning, noon and night.” He refused to resign. See article

Muslims around the world continued to protest, sometimes violently, over the **pope's** recent lecture quoting a Byzantine emperor's negative views of Islam. The Vatican issued a rare apology for any offence that had been caused, and the pope's trip to Turkey in November is still on. See article

In their general election, disgruntled **Swedes** threw out the long-serving Social Democrats led by Goran Persson in favour of a four-party centre-right alliance under Fredrik Reinfeldt. Mr Reinfeldt will have a

narrow majority of seven seats, but that is enough for him to form a new government, which promises modest tax and welfare cuts and some privatisation. See article

The breakaway Moldovan enclave of **Transdniestria** held a referendum in which voters overwhelmingly opted for independence and possible union with Russia. No outside body endorsed the vote, not even Russia. See article

In two state elections in eastern **Germany**, the Christian Democrats, the party of Chancellor Angela Merkel, lost heavily. And the neo-Nazi National Democratic Party won a clutch of seats in Mecklenburg-West Pomerania for the first time.

Grudging welcome

Sudan's president, Omar al-Bashir, told the United Nations that 7,000 African Union peacekeepers in Darfur could stay for a bit, despite an earlier threat to throw them out, but rejected the plan for a bigger UN force. The Security Council and African leaders tried to work out how to make the African force more robust. See article

Iran's president, Mahmoud Ahmadinejad, told the UN General Assembly that America and Britain were using the Security Council for their own ends. George Bush adopted a relatively conciliatory tone in his address to the body, saying he hoped diplomacy could solve the stand-off over Iran's nuclear programme. See article

General John Abizaid, America's top military commander in the region, said that America is unlikely to begin withdrawing its troops from **Iraq** until mid-2007.

Abdullahi Yusuf, the president of **Somalia** (or at least of its temporary capital, Baidoa), narrowly escaped assassination by a suicide car-bomb, which killed several people.

A judge in **South Africa** threw out a corruption case against Jacob Zuma, a former deputy president, before it properly began. Mr Zuma was acquitted of rape earlier this year and it now looks as if he will run for president in 2009. See article

The World Health Organisation recommended that use of the insecticide **DDT**, which was more or less banned because of its effects on wildlife, should be actively encouraged in certain circumstances: people who live in malarious areas should spray their houses to kill mosquitoes.

Finally fizzling

Andrés Manuel López Obrador, the failed left-wing candidate in **Mexico**'s presidential election in July, proclaimed himself president-elect, promised to set up a rival government and vowed to continue his campaign of “peaceful civil resistance”. But his populist movement of opposition to president-elect Felipe Calderón is losing momentum. See article

Brazil's president, Luiz Inácio Lula da Silva, sacked his campaign chief, Ricardo Berzoini, just 11 days before the presidential election amid ongoing allegations of dirty tricks. Mr Berzoini is president of the governing Workers' Party. Two other Lula advisers resigned.

More than 50 heads of state from the 118-strong **Non-Aligned Movement** gathered in Havana for their three-yearly summit. The shrillest speeches came from the leaders of Iran, North Korea and Venezuela, who all predictably aligned themselves behind criticism of America, while the leaders of India and Pakistan encouragingly agreed to resume peace talks.

Getty Images

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Business this week

Sep 21st 2006
From The Economist print edition

Concerns were raised about the regulation of hedge funds after **Amaranth Advisors**, based in Connecticut, lost billions of dollars because it misjudged the natural-gas futures market; its losses this month could reach 65% of its funds. As speculators, including Goldman Sachs, counted their losses, Christopher Cox, head of America's Securities and Exchange Commission, gave warning that certain types of hedge funds are not appropriate for individual investors. See article

Russia was criticised by Europe and Japan after withdrawing its approval, on environmental grounds, of a permit required for a $20 billion energy project led by **Royal Dutch Shell** on the eastern island of Sakhalin. The decision to revoke the licence (which must be approved by regulators) raises the chances that Gazprom, the state gas monopoly, will force its way into the project. See article

Responding to speculation, which was putting pressure on its share price, **EADS** confirmed that there would be “further delays” in the production of Airbus's A380. The planemaker's parent company gave no details (a review of the super-jumbo's production is expected soon).

MAN trap

Scania, a Swedish truckmaker, rejected a *euro*9.6 billion ($12.2 billion) takeover bid from MAN, a German rival. Scania's two leading shareholders, Volkswagen and the investment arm of Sweden's Wallenberg family, believe the offer undervalues the company. But a battle for control seemed certain after MAN received the support of Renault, which holds a 5% voting stake in Scania. See article

Ford said it had employed the services of Sir John Bond, Vodafone's chairman and a former chairman of HSBC, as a part-time financial consultant to Bill Ford, the carmaker's chairman. Last week investors showed little enthusiasm when Mr Ford unveiled plans for 10,000 more white-collar job cuts and two additional plant closures.

Detroit's woes continued as DaimlerChrysler's boss, Dieter Zetsche, predicted that **Chrysler** would make a loss for the year, rather than a previously forecast profit. As it continues to lose market share in North America, the carmaker is making additional cuts to vehicle production this year. See article

Communications breakdown

The row over **Telecom Italia's** restructuring scheme intensified when the company's chairman resigned in apparent protest at government meddling. The centre-left government and unions say they will oppose TI's plan to spin off its fixed-line and mobile businesses to concentrate on broadband and media services. But TI's commitment to the plan was underscored when it announced the acquisition of AOL's broadband business in Germany. See article

A consortium of **private-equity firms** led by Blackstone looked set to seal a $17.6 billion bid for **Freescale Semiconductors** after a rival consortium ended negotiations on its offer. Freescale, once part of Motorola, accepted Blackstone's bid, but has 50 days to solicit other offers. See article

Motorola made its biggest acquisition since it took over General Instruments in 2000 by agreeing to buy **Symbol Technologies** for $3.9 billion. The deal allows Motorola to expand its corporate logistics business; Symbol makes hand-held devices (often used in supermarkets) for tracking stock and reading radio-identification tags.

Oracle reported a 29% increase in net profit for the quarter ending August 31st, compared with a year

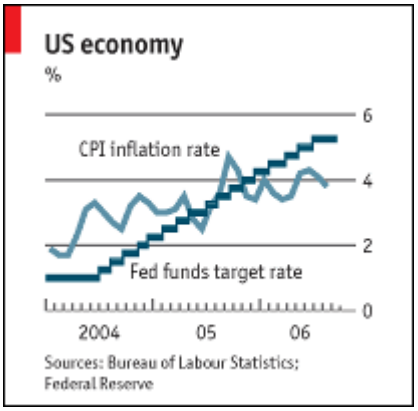
earlier—evidence that Larry Ellison's strategy is working. Mr Ellison has spent $20 billion in acquisitions over the past three years, and maintained that his spree would result in higher profits. More tellingly, Oracle's sales of new software licences rose sharply, indicating stable future revenues from its core business.

Serono, a Swiss pharmaceutical company, which had been searching for someone to take it over, finally found a buyer. **Merck**, a German rival, said it would buy the 64.5% stake in Serono held by the Bertarelli family for SFr16.6 billion ($13.3 billion) and make an offer for the remaining shares.

Another long-running drugs saga, over the purchase of **PLIVA**, a Croatian drugs company, came to a head when **Actavis**, an Icelandic rival, withdrew its bid, leaving a $2.5 billion offer from **Barr Pharmaceuticals** on the table.

Hand in hand

America's Federal Reserve left the **federal funds rate** unchanged at 5.25%. The decision came after it was reported that America's headline **inflation rate** had fallen by more than expected in August, partly because of a slower increase in energy prices, which rose by 0.3% in August compared with 2.9% in July.



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Financial markets

The dark side of debt

Sep 21st 2006
From The Economist print edition

Public markets for raising and investing capital are plunging into the shadows

Reuters

LENDING is a sober business punctuated by odd moments of lunacy. Genoese lenders' indulgence of Philip II of Spain's expensive taste for warfare caused not only the world's first sovereign bankruptcy in 1557, but the second, third and fourth as well. Lenders recycled petrodollars to third-world countries in the 1970s in the wilfully naive belief that countries, because they cannot go bust, will not default.

The world is once again in the grip of a spree of lending, but this time to companies rather than countries. What is striking is that much of this lending is happening not through public share and bond markets, nor exclusively through banks (see article). The issuance of syndicated loans vaulted to $3.5 trillion last year, from $2.3 trillion in 2000. Thanks to the low cost of debt, private lenders, such as hedge funds, are extending vast amounts of credit to leveraged buy-out firms and other private borrowers. Forsaking the sunlit uplands of global finance, the market for capital is plunging into the shadows.

For the financiers, that is an irresistibly lucrative place to be. In thinly traded, lightly regulated and untransparent markets, the bold can make an awful lot of money—and they can lose it on an even more extravagant scale. A bunch of investors is $6 billion or so poorer this week, after it emerged that Amaranth Advisors, a hedge fund that had some $9 billion under management, suffered catastrophic losses in a few weeks on the back of falling natural-gas prices (see article).

There is every chance that the markets can cope with a wilting Amaranth, or worse. Moreover, business people have perfectly good reasons for wanting to operate out of the public gaze. The trouble is that the vulnerabilities of debt's dark side have not yet been fully tested by the next act of collective lunacy. The shadows are scary because nobody quite knows what secrets they hold. That has got regulators worried—and rightly so.

Dark matter

Back in the days of claret-filled city lunches, life was so simple. Company pension funds and mutual funds put money into the securities of states and listed firms and hoped that they did well. Things are a great deal more complicated now. Even as the private world has eclipsed public markets, finance has been convulsed by a computer-enhanced frenzy of creativity. In today's caffeine-fuelled dealing rooms, a barely regulated private-equity group could very well borrow money from syndicates of private lenders,

including hedge funds, to spend on taking public companies private. At each stage, risks can be converted into securities, sliced up, repackaged, sold on and sliced up again. The endless opportunities to write contracts on underlying debt instruments explains why the outstanding value of credit-derivatives contracts has rocketed to $26 trillion—$9 trillion more than six months ago, and seven times as much as in 2003.

In many ways, these complex derivatives are good for economies. Because they allow investors to lay off the risk of borrowers' defaults, they free lenders to lend more. Because risk is dispersed to those who have an appetite for it, the system should be more robust. Because derivatives are traded in liquid markets, they rapidly transmit information about the creditworthiness of borrowers. The benefits of this hyperactive shuffling of money spread well beyond financial markets. If companies are borrowing more cheaply and sensibly to make acquisitions, pay dividends and buy back their own shares, businesses everywhere should run more efficiently.

That is the theory, at least. And so far, it has broadly been borne out. The markets struggled to cope with financial crises in Asia and Russia in the late 1990s and with the implosion of Long-Term Capital Management, a hedge fund, in 1998. By contrast, there were never serious fears that the dotcom bubble burst, September 11th 2001, or, more recently, the collapse of General Motors' bonds and investors' flight from risky investments, would lead the system to collapse.

Regulators understand very well how much the world stands to gain from this revolution in finance, but they are nevertheless nervous. Because of the lack of transparency, they cannot see whether these volatile new debt instruments are in safe hands or how they will behave in a crisis when everyone is heading for the exits. As Donald Rumsfeld might have put it, they have left a world of known unknowns for a twilight landscape of unknown unknowns.

Last week Timothy Geithner, the Federal Reserve's man on Wall Street, gave warning that all this might make financial crises less common, but more severe. Britain's Financial Services Authority complained this week that investment banks and hedge funds were sloppy and prone to conflicts of interest. In a panic, incomplete paperwork could cause the whole system to collapse amid disputes about who owns which liabilities. Worryingly, firms had wildly different estimates for the risks of similar portfolios of investments. Someone somewhere is investing on flawed assumptions.

Sensible things can be done. Mr Geithner and the New York Fed have with some success been demanding that the derivatives markets sort out their bureaucracy. He wants banks to increase the cushion of collateral they require from highly leveraged clients, in case trades go bad. Banks, which routinely play computerised war games simulating the risks in their trading strategies, are being asked to be harder-nosed about assessing which hedge funds they deal with. Because the great fear is ignorance, regulators are commendably seeking unobtrusive ways to keep tabs on the markets.

Regulators also hint that it might eventually be necessary to supervise credit hedge funds, now monitored via their brokers. Here the markets' desire for obscurity contains a lesson as well as a threat. The rush into the shadows is also partly a flight from regulation, to be free of the costs and the burdens of compliance and to preserve the “cover” that helps an outfit keep a profitable trade to itself. When the next recession reveals the next act of lunacy and the urge to re-regulate finance takes hold, remember that today's successes were founded partly on those freedoms.

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Soldiers in power

Thailand's dangerous coup

Sep 21st 2006
From The Economist print edition

The army has learned nothing and forgotten nothing

AP

Get article background

MILITARY coups, like wars, are easy to start but hard to end. They mostly begin rather as Thailand's did this week: at night, with tanks on the streets of the capital, television stations surrounded, programming suddenly replaced with martial music and, in the light of morning, a promise from a grim-faced general that power has been seized only temporarily and that democracy will soon be restored, once the constitution has been suitably adjusted.

After that, though, anything can happen. Revising the constitution may turn out, alas, to be an impossible task, so that the army regretfully has no choice but to remain in power, as it has done in Myanmar these past 18 years. Or the coup leader may restore “democracy” but rig the system and install himself seemingly indefinitely, as General Suharto did in Indonesia for 32 years, until 1998. Or things can go badly wrong, as they did in Thailand the last time the men in khaki seized power: opposition to the 1991 coup eventually resulted in bloodshed and military rule collapsed in 1992 after the intervention of the king. Which is why the Thai armed forces' latest escapade, on the night of September 19th, is so alarming (see article). Although the coup was apparently bloodless and accompanied by promises of an election in a year or so, no one has any real idea what will happen next.

Thailand was certainly no paragon of democracy before Tuesday night. Its prime minister, Thaksin Shinawatra, was accused of many sins, from corruption and nepotism to gross incompetence in his prosecution of the fight against Muslim insurgents. He was lambasted for his dominance of the airwaves through his communications group, Shin Corp—and then attacked for hugely enriching himself by selling it to Singapore.

Mr Thaksin was particularly hated by urban Thais because of his open-handed courting of the rural vote, using debt-forgiveness and expensive subsidies for health care and rural development. To many, this was “vote-buying”, though it never really went further than canny populism. He had won a thumping election victory in 2001 on the back of such promises. He won again in 2005, and would presumably have won a third time, in the snap election he called in April 2006, had the opposition not boycotted the poll, in effect invalidating the vote. Faced with a hollow victory and mass protests, Mr Thaksin briefly stepped down.

The anti-Thaksin demonstrators who had been blocking Bangkok streets for months hailed this as a huge

victory for democracy, claiming to have served the greater good by achieving on the streets what they could not manage at the ballot box. What they failed to see, however, is that although getting rid of Mr Thaksin was no bad thing, their way of doing it struck a deep blow at a still fragile political system. Thailand has endured some 18 coups since the 1930s and been dominated by the armed forces for much of the post-war period. So it was still learning to live with its first fully democratic constitution, introduced in 1997. That constitution has now been suspended, pending revision.

Long poorly governed, Thailand has been adrift since the failed April election. The king gloomily gave warning at the time that the political impasse could see Thailand “sink more than 4,000 metres beneath the sea. Irretrievable.” Mr Thaksin returned to the prime minister's office to run the country as caretaker until a fresh election could be held. By all accounts, he has clashed repeatedly with senior army officers, riling them by trying to install his own loyalists in senior posts. Still, new election commissioners had been appointed earlier this month (the last lot had been arrested), and there seemed some prospect of holding fresh elections in November. The snag, of course, was that Mr Thaksin's party might very well have won them. The anti-Thaksin demonstrators, buoyed by their earlier success, presumably would not have accepted that. More chaos beckoned, and the army decided to act while Mr Thaksin was away at the United Nations in New York.

The generals' error is to assume that a coup will solve anything. Whenever an election is held, Mr Thaksin's rural, populist Thai Rak Thai party will surely do well, whether or not he is allowed back into the country to lead it. And the principle of changing governments by street protest and military putsch has been re-established, undoing all the progress of the past decade, which had seen Thailand slowly emerge from the shadow of the barracks and the royal palace. More instability, not less, is the likely outcome. Nor is turmoil likely to help clean up political life. Corruption flourished under a succession of military-favoured prime ministers and was bad, too, under the opposition Democrats in the late 1990s.

A dangerous example

The malign consequences of the coup may not be confined to Thailand itself. Most governments, with the honourable exception of Australia's, have been limp-wristed in their condemnation of the assault on Thailand's democracy. Others in the region may yet draw lamentable conclusions from that. One victim could be the Philippines, with its own long history of coups, not to mention the most recent removal of an elected president, Joseph Estrada, in 2001 through a combination of urban protest and behind-the-scenes military manoeuvres. Those in the Philippine army who continue to plot against the current president, Gloria Macapagal Arroyo, may be emboldened by the events in Thailand, especially if foreign protest remains muted. In Malaysia there is no military threat, though there is a long-established tendency to authoritarianism within the ruling party, UMNO, that might now be reinforced.

But the bigger danger lies farther south. Indonesia and Thailand were partners in the democratic experiment of the late 1990s. Thailand's democracy constitution of 1997 preceded by a year the downfall of Suharto. And Thailand's apparent success in taming its soldiers has been a model for Indonesia in transforming a deeply repressive society into one of Asia's most vibrant and open. So far, Indonesia's generals have behaved pretty impeccably, despite the many problems of that vast archipelago. It would be a tragedy if the dangerous events in Thailand gave them other ideas.

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Russian energy

Yukos revisited?

Sep 21st 2006
From The Economist print edition

Russia must stop strong-arming foreign investors

IT IS natural to be miffed when a deal that seemed shrewd turns out worse than you thought. It is especially galling if it involves a prized asset. The civilised response—if the other party is disinclined to renegotiate—is to shrug and move on. But with the gigantic energy developments on Sakhalin Island, the Kremlin prefers to bully its partners into surrender.

Sakhalin and the seas around it host the two biggest foreign investments in Russia, which are also two of the world's biggest energy projects. Led by Exxon Mobil and Royal Dutch Shell, the consortia signed "production-sharing agreements" (PSAs) with the Russian government in the 1990s to insure against unpredictable legal changes; another PSA applies to an Arctic development led by Total, of France. Sakhalin has other ominous peculiarities. The Shell consortium is building Russia's first liquefied natural gas (LNG) plant, to serve markets in North America, South Korea and Japan. It is the only big energy scheme without a Russian partner. The projects are also the only exceptions to Gazprom's gas-export monopoly—staunchly defended by both the state-controlled gas giant and the Kremlin against European efforts to break it up.

In other words, Sakhalin is potentially crucial in the Kremlin's drive to recapture its geopolitical clout using energy wealth. Hardly surprising, then, that its state-controlled energy firms want pieces of the island action. Opportunities for foreign firms in energy—the "holy of holies" of the economy, as Vladimir Putin puts it—are now tightly circumscribed. Using Gazprom and Rosneft, a state-controlled oil firm, the Kremlin has recaptured its stewardship of the industry. PSAs were controversial even when they were signed, amid low oil prices and a scarcity of foreign capital and expertise; now that Russia is flush, to some officials they look downright humiliating. (An enormous cost overrun at Shell's Sakhalin project, which will massively reduce the state's share of the profits, has bolstered this conviction.) Other countries, Kremlin apologists point out, have redrafted energy deals as the oil price has risen.

Gazpromise

But none of that makes Russia's behaviour right. The Kremlin has opted for intimidation rather than negotiation. This week, the government revoked an environmental approval that may halt the Shell-led consortium's work—to the ire of Japan, which has already bought much of the anticipated LNG; Japanese companies also own 45% of the enterprise. There are legitimate environmental gripes with the scheme; but the move seems more related to Gazprom's efforts to barge its way in. Rosneft already has a minority stake in the Exxon consortium, but the Americans have also been the subject of threatening murmurs, as has Total. The Kremlin evidently believes the benefits of this strong-arming outweigh the risks. Global energy reserves being distributed as they are, foreign oil majors will surely take whatever terms Russia offers; anyway, some Russians believe, business always is a grubby affair.

The Kremlin should think again. For all its swagger, Russia still needs outside participation in its energy industry. With Russia looking to raise more than $20 billion from investors in listings in the next 18 months, other parts of the economy need foreign investment even more. Russia's reputation is still recovering from the Kremlin's last backdoor appropriation—the renationalisation of much of Yukos. To sustain that recovery, the Kremlin needs to be more civilised over Sakhalin.

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America's economy

Helping America's workers

Sep 21st 2006
From The Economist print edition

The Democrats need to posture less and think harder

Alamy

BACK in the 1990s, when Democrats last had any power in Washington, the party was run by economic centrists. Bill Clinton and his crowd believed in free trade and free markets. They were friendly to business and wary of unions. The centrists' creed was that government should not interfere with the market, but help workers cope with the consequences.

Judging by the political rhetoric of the mid-term election campaigns, that centrism has all but disappeared. As they rail against America's growing income inequality and the stagnation of many workers' wages, the Democrats have tilted clearly to the left. Gone is the firm defence of globalisation. In its place is a new populism, based on bashing business, boosting the unions and meddling with markets. The party's bigwigs attend anti-Wal-Mart rallies and lambast the company—America's biggest retailer and private employer—for failing to provide adequate health care or recognise unions. Virtually every Democrat in Congress wants new laws to make union organising easier (see article). And almost everyone puts top priority on raising the minimum wage.

This populism is based on a dangerous combination of nostalgia and sloppy thinking. The nostalgia is for a rose-tinted version of the 1950s and 1960s. If only the unions were stronger or big business cowed, the argument runs, the middle class would once more flourish, and the gap between rich and poor would narrow.

That is nonsense. The principal causes of rising inequality, in America and much of the rest of the world, are rapid technological innovation and globalisation. These structural shifts, which have spawned enormous prosperity, are boosting the earnings of the most skilled and well-educated far faster than the rest. Neither business-bashing nor union-boosting will turn back the clock, as most Democrats privately admit. But Wal-Mart is an irresistibly easy target. Crafting an agenda that would really help American workers would be rather more demanding.

Start with tax reform

If Democrats are serious about fighting inequality, their top priority ought to be tax reform. America's tax code is the country's main mechanism for redistributing income. Yet it is a tangled mess, increasingly reliant on regressive taxes, such as the payroll tax, and full of subsidies that benefit rich people while reducing economic efficiency.

The mortgage-interest deduction, a subsidy for home-owners, costs some $80 billion a year, does little to help poor people buy their own homes and does a lot to encourage rich people to buy McMansions. Over half the subsidy goes to the richest tenth of Americans. Tax incentives for employer-provided health insurance cost some $150 billion a year and are a big reason for America's escalating medical costs. Again, the richest tenth of Americans captures more than one-quarter of the benefits. All told, the tax code is larded with more than $700 billion-worth of inefficient subsidies. Scaling them back would improve the economy's efficiency and would free up a huge amount of money, both to reduce the deficit and to shift resources to poorer Americans.

And the best way to shift those resources is again through the tax code, by expanding the Earned Income Tax Credit (EITC). Introduced in 1975 and extended by Ronald Reagan and every president since, the EITC is a type of negative income tax for poor workers and is America's most efficient anti-poverty tool. If Democrats are serious about helping poor workers, they should advocate further expansion. But few Democrats mention the EITC on the hustings. Instead they want to raise the minimum wage, a market-meddle whose costs are debated, but which few would prescribe as the most efficient route to helping the poor—particularly since not all minimum-wage workers are poor.

In sum, today's Democratic politicians care more about embracing empty symbolism than crafting effective policies. Not only do they fail to push ideas, such as EITC expansion, that are known to work; but they have also avoided intellectually tougher debates, such as how to revamp health-care or counter the rising elitism of the universities (see article). A few hardy souls in Washington think-tanks still dream up market-friendly centrist ideas—the latest a proposal to aim unemployment benefits at workers whose old jobs have gone for good and whose new jobs pay less, rather than those who are temporarily out of work (see article). But Democratic bigwigs are too busy sounding populist to notice.

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Sweden's election

Voters of the centre-right, unite

Sep 21st 2006
From The Economist print edition

Lessons for Britain and others in Europe from Fredrik Reinfeldt's victory

AP

UNLIKE its fellow Baltic city of St Petersburg, Stockholm is not known as a hotbed of revolution. Yet Sweden's election on September 17th, which threw out the ruling Social Democrats, turned the political order upside down.

The Social Democrats have been in power for the past 12 years, and for 65 of the past 74 years. The economy, which so often decides tight elections, has been doing well. GDP growth in the second quarter was a dizzy 5.6% at an annual rate. For over a decade, the rest of Europe has looked enviously at Sweden and its famous model—and searched for ways of emulating it. So why did the voters narrowly decide to turf out Goran Persson, their prime minister for ten years, in favour of Fredrik Reinfeldt, leader of the Moderate Party and of the four-party opposition alliance (see article)?

There are three answers. The first is the peril of long incumbency. Anybody seeking a fresh term after ten years in office had better be an adept salesman. Mr Persson is not. He was regarded as a bully in both party and country. One of the consequences is that he has no obvious successor within the party. His government was tainted by the minor scandals that tend to beset ageing administrations. Instead of setting out bold new policies before the election, he offered voters the same as before, only more so.

That was never going to be good enough, for a second reason: that the country's economic performance has not been quite as impressive as starry-eyed foreigners believe. The Swedish model has delivered good GDP growth, strong high-tech companies, some of the world's best exporters and a lavish welfare state. But productivity growth has been disappointing, partly because so much of the economy is in the public sector. Above all, Sweden has failed to create enough jobs, especially private ones. Indeed, it has seen almost no net increase in private-sector jobs in 50 years; it is one of only two European countries (the other being Finland) in which the past decade's growth has not been accompanied by net job creation. Sweden's youth unemployment runs at a shocking rate of one in four. Thanks to a highly regulated labour market and the enduring power of its trade unions, Sweden's rapidly growing numbers of immigrants have found it exceptionally difficult to get work.

These two factors go far towards explaining why Swedish voters turned against the Social Democrats, for whom this was the worst electoral result since 1914. But they had a third reason to switch to the centre-right: a bright, attractive, young, united and, above all, unthreatening opposition. Mr Reinfeldt won the election as much as Mr Persson lost it.

The Moderate Party was trounced in 2002 when it ran on a radical platform that promised to slash taxes and gut the Swedish welfare state. Mr Reinfeldt, who took over the leadership in 2003, reached the conclusion that he should jettison radicalism and shift sharply to the centre. He said he would cut taxes for the low-paid and trim unemployment benefits, but he also promised to preserve the Swedish model. He yoked the four centre-right parties, which had previously bickered, into campaigning as an alliance on a single platform. He even cheekily renamed his party the New Moderates, and declared after the election that, having run on that ticket, he would govern on it too.

Nothing to lose but their chains

There are lessons in all this for the rest of Europe. One is that long-serving governments are vulnerable to voters' natural desire for a change. A second is that neither the Swedish model, nor the broader Nordic one, will at a stroke solve Europe's economic problems. Job creation, in particular, depends on deregulation of labour markets, liberalisation of product markets and the opening-up of protected economies to more competition, all of which are likely to encounter fierce resistance from trade unions and other interest groups.

To a British observer, in particular, the story of the Moderate Party's success will have further resonance. Indeed, Mr Reinfeldt drew direct inspiration from Tony Blair, who reinvented the Labour Party as New Labour in the mid-1990s. And there may now be another parallel with David Cameron, Britain's Conservative leader, whose youth (39 to Mr Reinfeldt's 41), attractiveness and decision to dump radicalism and shift his party towards the political centre all strike a similar note to Mr Reinfeldt's. Mr Cameron, like young opposition leaders everywhere, must now be hoping to copy Mr Reinfeldt's moderate, but very successful, Swedish model.

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Technology leapfrogs

Behind the bleeding edge

Sep 21st 2006
From The Economist print edition

Skipping over old technologies to adopt new ones offers opportunities—and a lesson

Corbis

MANKIND'S progress in developing new gizmos is often referred to as the “march of technology”. That conjures up images of constant and relentless forward movement orchestrated with military precision. In reality, technological progress is rather less orderly. Some technologies do indeed improve at such a predictable pace that they obey simple formulae such as Moore's law, which acts as a battleplan for the semiconductor industry. Other technologies proceed by painful lurches—think of third-generation mobile phones, or new versions of Microsoft Windows. There are even the occasional backward steps: you can skip over the trailers when watching a film on video, but for some reason you are not allowed to do so when watching a DVD. And there are some cases, particularly in the developing world, when technological progress takes the form of a leapfrog.

Such leapfrogging involves adopting a new technology directly, and skipping over the earlier, inferior versions of it that came before. By far the best-known example is that of mobile phones in the developing world. Fixed-line networks are poor or non-existent in many developing countries, so people have leapfrogged straight to mobile phones instead. The number of mobile phones now far outstrips the number of fixed-line telephones in China, India and sub-Saharan Africa. By their very nature, mobile networks are far easier, faster and cheaper to deploy than fixed-line networks.

There are other examples. Incandescent light bulbs, introduced in the late 1870s, are slowly being displaced in the developed world by more energy-efficient light-emitting diodes (LEDs), in applications from traffic lights to domestic lighting. LEDs could, however, have an even greater impact in parts of the developing world that lack mains power and electric lighting altogether. LEDs' greater energy efficiency makes it possible to run them from batteries charged by solar panels during the day (see article). So there is the prospect of another leapfrog, as the rural poor skip over centralised electric grids and straight to a world of energy-efficient appliances run using local “micropower” energy sources. Other leapfrogs include the embrace by China and Brazil of open-source software, and China's plan to build a series of “eco-cities” from scratch based on new green technologies.

Being behind the “bleeding edge” of technological development can sometimes be a good thing, in short. It means that early versions of a technology, which may be buggy, unreliable or otherwise inferior, can be avoided. America, for example, was the first country to adopt colour television, which explains why American television still looks so bad today: other countries came to the technology later and adopted technically superior standards. Leapfrog technologies can also spread faster, because they do not face competition from entrenched earlier systems. And leapfrogging straight to a green technology means

there is no need to dispose of the old, dirty one. By the time Chinese consumers started buying fridges in large numbers, for example, refrigeration technology no longer depended on ozone-destroying CFCs.

Jumping to conclusions

The lesson to be drawn from all of this is that it is wrong to assume that developing countries will follow the same technological course as developed nations. Having skipped fixed-line telephones, some parts of the world may well skip desktop computers in favour of portable devices, for example. Entire economies may even leapfrog from agriculture straight to high-tech industries. That is what happened in Israel, which went from citrus farming to microchips; India, similarly, is doing its best to jump straight to a high-tech service economy. Rwanda even hopes to turn itself into an African tech hub.

Those who anticipate and facilitate leapfrogging can prosper as a result. Those who fail to see it coming risk being jumped over. Kodak, for example, hit by the sudden rise of digital cameras in the developed world, wrongly assumed that it would still be able to sell old-fashioned film and film cameras in China instead. But the emerging Chinese middle classes leapfrogged straight to digital cameras—and even those are now outnumbered by camera-phones.

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On Sweden, the London Stock Exchange, Donald Rumsfeld, airline safety, Japanese comics

Sep 21st 2006
From The Economist print edition

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FAX: 020 7839 2968 E-MAIL: letters@economist.com

Sweden's model economy

SIR – Your report on Sweden's economic performance played up the incidence of hidden unemployment in the country without acknowledging that virtually all OECD countries have similar problems ("Admire the best, forget the rest", September 9th). In America, for example, the number of discouraged workers and people claiming disability benefits has rocketed in recent years; the prison population is large relative to other countries; and there is a systematic tendency for official data to play down the under-utilisation rate in the labour market because the long-term unemployed are removed from the unemployment rolls after six months.

Furthermore, you failed to even mention the Swedish model's most significant achievement: its success in delivering one of the lowest levels of inequality and highest levels of social mobility in the OECD without any significant sacrifice of living standards or economic growth. Since the efficiency/equity trade-off is the biggest challenge posed by—and to—globalisation, it surely deserved consideration.

Fred Argy
Visiting fellow
Australian National University
Canberra, Australia

Big Bang theory

SIR – It was not the British government that "deregulated the financial markets in 1986" ("Day of the MiFID", September 9th). The government offered to enact legislation in 1983 to exempt the London Stock Exchange from proceedings in the Restrictive Practices Court providing the LSE volunteered to abolish its rules on fixed minimum commissions. This it did with the backing of a healthy majority of its members and the bill was adopted by Parliament in the autumn of 1983. All the other changes that are collectively known as the "Big Bang" were also enacted by the exchange itself with no government prompting or decree and were implemented in 1986 because it took time to install a new market system on which investors could rely.

I do agree that the Big Bang greatly helped the City in its quest to reign as a global financial hub. That was the aim of the changes. They have affected far more than just the LSE and I think they have massively succeeded. I doubt if the European Union's new directive for financial markets will have anything like such a profound effect.

Sir Nicholas Goodison
Chairman
London Stock Exchange, 1976-88
London

Defending strategy in Iraq

SIR – You assert that difficulties in Iraq can be explained by errors such as "disbanding Iraq's army [and] committing too few American troops", which you claim are the fault of Donald Rumsfeld, America's secretary of defence ("Five years on", September 2nd). A few facts are in order. Although officially

disbanded in May 2003 by coalition officials in Iraq, the Iraqi military had already largely disbanded itself by then. As the commander of the top division in the Iraqi Republican Guard explained: “I started the war with 13,000 soldiers. By the time we had orders to pull back to Baghdad, I had less than 2,000; by the time we were in position in Baghdad, I had less than 1,000. Every day the desertions increased.”

It is also incorrect to suggest that Mr Rumsfeld opposed sending more troops to Iraq. The secretary has regularly asked General John Abizaid, who took command of the mission in the summer of 2003, if he had all the necessary resources, and, if not, what more was required to carry out a successful campaign. Commanders in the field have consistently said that they need more intelligence and Iraqi forces, not American troops. General Tommy Franks, General Abizaid's predecessor, told the Senate in July 2003, when he was still in command in Iraq, that: “There has been [the] suggestion that perhaps there should be more troops. And in fact, I can tell you...that if more troops are necessary, this secretary's going to say yes.” Reliance on the counsel and advice of experts continues today.

Dorrance Smith
Assistant secretary of defence for public affairs
Department of Defence
Washington, DC

Enjoy your flight!

SIR – I appreciated the honest safety-announcement from Veritas Airways (“Welcome aboard”, September 9th). But it forgot to mention that at today's cruising altitudes passengers are exposed to a considerable amount of radiation, especially on transatlantic flights close to the pole.

Klaus Meyer
Athens

SIR – The bright-yellow lifejackets are not intended to act as flotation devices. They are there to make it easier for the recovery services to spot the bodies strewn across rough terrain. (I was once asked to put on a life-jacket over central Germany, some 300 miles from the sea.) And the advice to adopt a head-down fetal position in the event of a crash landing does nothing to preserve life, given that the stall speed of a modern airliner means it will connect with the ground at terminal velocity. However, the position does tend to preserve dental data, useful for identifying dilapidated corpses.

Roger Willis
Peel, Isle of Man

SIR – For a truly irritating experience, nothing beats flights to and from Brussels. Safety instructions are screamed at you in four languages—Dutch, English, French and German—each spoken with such a terrible accent that one wonders if the flight attendants have a mother tongue at all. I love it when they finally shut up, but at the end of the flight the torture is repeated when they shout to tell you how much they loved having you aboard, again in four languages.

Jorge Ferrer Deglmann
Berlin

SIR – Another absurdity is microphone-hogging pilots announcing the planned altitude of the flight (31,000 feet, rather than 32,000 feet—as if we cared). According to older pilots, this useless statistic came into favour at the time of conversion to jet aeroplanes when the impact of flying over the weather, rather than through it, was novel.

John Conlin
Chadds Ford, Pennsylvania

SIR – The most honest briefing I have ever had was on a helicopter flying me to an oil rig in the North Sea: “Take off your watch because it stops your survival suit making a good seal around your wrist. If we go down and the water gets inside the suit, it's so cold you'll last about five minutes.”

Paul Gillions
Hitchin, Hertfordshire

So hip it hurts

SIR – We are Japanese-comic fans who want you to know that you made a mistake and we are embarrassed for you ("Kick-ass maidens", September 2nd). The picture you showed in your article is not of a woman but is our favourite male ass-kicker, Kenshin Himura. We understand how you got confused because he looks like a girl, but he is a boy. Feel free to consult with us on any Japanese-comic articles you do in the future.

Darla, 14
Antonia, 12
Kaitlyn, 12
New York

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Thailand's military coup

Old soldiers, old habits

Sep 21st 2006 | BANGKOK
From The Economist print edition

EPA

The land of smiles is back to being the land of coups

Get article background

THE six-man military junta that seized control of Thailand's government on September 19th appeared before the world's diplomats and press the next day to insist it had no intention of clinging to power. “After two weeks, we step out,” promised Sonthi Boonyaratglin, the army's commander-in-chief, who led the coup. By then they would have chosen a civilian administration to run the country for a year or so. This new cabinet would in turn select a committee to write a new constitution, which would be put to a referendum. An election would follow thereafter.

The junta—which has styled itself the Council for Democratic Reform—insists its aim is to rescue Thai democracy from the “rampant corruption” in the government of Thaksin Shinawatra, the prime minister it deposed. It was also responding, it said, to Mr Thaksin's meddling in the country's supposedly independent institutions and to the deep division he has sowed among Thais. To their credit, the military men took control without firing a bullet or spilling one drop of blood. However, sitting side-by-side in the imposing auditorium at army headquarters, with the decorations on their smart uniforms gleaming in the television lights, they could not avoid looking like a throwback to Thailand's not-so-distant past, when military chiefs regularly seized power, rarely bringing better government.

Thailand's current constitution, written as recently as 1997, has been scrapped. Five new election commissioners, chosen earlier this month by the Senate, will be replaced. Political gatherings of more than five people have been banned and there will be censorship of local and foreign news media. The coup leaders said they had “invited” Chidchai Vanasathidya, Mr Thaksin's chief deputy—who had been left in charge while the prime minister was attending the General Assembly of the United Nations in New York—to stay at army headquarters for the time being.

Rumours of an impending coup have been swirling around Bangkok for weeks. But they could easily have been wishful thinking by some of Mr Thaksin's opponents. After all, anti-Thaksin newspapers incorrectly announced his imminent downfall several times during the street protests against him earlier this year. However, this time the conspiracy theorists were right. The rumours rose to a crescendo during Tuesday until eventually, in the late evening, tanks were seen rolling towards Government House.

In New York Mr Thaksin managed to contact one of Thailand's television networks and began a live

broadcast, declaring an emergency and relieving General Sonthi of his command. But it was cut short and, shortly thereafter, a retired military officer appeared on all channels to announce the coup.

The coup brings to an end the months of uncertainty that followed the snap election Mr Thaksin had called in April to try to bolster his support. The main opposition parties boycotted that poll and, as a result, it failed to produce a quorate parliament. A tearful Mr Thaksin then announced he was stepping aside—temporarily, as it turned out—to restore national unity. Despite this, the political impasse continued, prompting King Bhumibol to tell the country's judges to sort out the “mess”. The constitutional court swiftly annulled the April election and, later, the criminal court jailed three of the election commissioners who had organised it.

There was little dissent, either from supporters of Mr Thaksin or from his opponents, when the new election commissioners were selected earlier this month. Thailand seemed to be heading towards a reasonably free and fair vote, perhaps as soon as November, in which the opposition parties would readily take part. Mr Thaksin was raising the possibility of declining the prime ministership if, as expected, his Thai Rak Thai party won again. Had he indeed stood aside in favour of a less divisive figure, the country's politics might have been put on the road to recovery. The reputation Thailand had recently acquired, as something of a model for multi-party democracy in South-East Asia, might have been restored.

It was not to be. In recent months General Sonthi had repeatedly rejected all suggestions of resolving the political crisis by undemocratic means. But his mind may have been changed not so much by political events as by military ones. The deciding factor may have been the culmination of months of infighting among cliques in the armed forces.

Class warfare

Mr Thaksin graduated from Class 10 (a sort of fraternity) of the Armed Forces Academies' Preparatory School and went on to become a police colonel, and then a hugely rich businessman, before entering politics. He has continued to foster links with his former Class 10 comrades and, in recent months, has been accused of trying to land them top military jobs. In this he was pitted against the alumni of Class 6, principally General Sonthi and the commanding officers of the navy, air force and national police. All four of these men are members of the junta that has removed Mr Thaksin from office.

It is also widely believed that Mr Thaksin's opponents in the armed forces enjoy the patronage of Prem Tinsulanonda, a retired general and former prime minister who is now the king's chief adviser. In July Mr Prem gave a speech to military cadets telling his audience that soldiers served the king, not politicians. This appeared to be his riposte to Mr Thaksin's grumble, expressed shortly beforehand, that a “charismatic individual”—widely assumed to mean Mr Prem—was undermining his government.

In late August a junior army officer was arrested in a car packed with explosives, near Mr Thaksin's home. Though the police took it as a serious assassination attempt, and made a series of arrests of military men, the prime minister's opponents claimed the whole event had been staged to bolster Mr Thaksin's support and to make his rivals in the army look bad. The next day a group of his supporters visited Mr Prem and asked him to intervene to “spare” Mr Thaksin's life.

Royal assent?

If the plot to overthrow Mr Thaksin did indeed go as high as Mr Prem, this inevitably raises the question of whether it received at least tacit approval from the king himself. Certainly, the monarch has not come out against the coup: on September 20th a royal proclamation approved General Sonthi as head of the new administration. Thais' deep reverence for their monarch, and the country's strict lèse-majesté laws, rule out any open discussion of such delicate matters. But when a foreign reporter put this question to the generals at their press conference, they replied: “We can assure you that this was solely and entirely our decision.”

It was not a good one for anyone who looked to Thailand as a newly stable democracy. This week's coup is Thailand's first in 15 years but its 18th since the end of the absolute monarchy in 1932. The country has had 15 constitutions since then but many Thai politicians and academics seem convinced that another rewrite will do the trick.

When the last constitution was written, in 1997, it was widely seen as having struck a successful balance. On the one hand it was expected to give Thailand the stronger executive and stronger political parties that the country needed, with its history of weak and short-lived administrations. On the other it introduced new checks and balances, such as a constitutional court and a powerful anti-corruption body. Yet the 1997 constitution is now blamed for allowing Mr Thaksin to dominate state institutions and abuse prime-ministerial power. Various wish-lists of reforms—such as easing the restrictions on switching party allegiance—have been drawn up, though it seems unlikely they will achieve the miracles expected of them, even if they are enacted.

At least the current coup-plotters seem a more decent bunch than Suchinda Kraprayoon, the leader of the most recent coup, in 1991, who in 1992 ordered his troops to open fire on protesters demanding a return to democracy, killing scores. General Sonthi has, so far, appeared to be an emollient figure. Mr Thaksin recently, and belatedly, put him in charge of quelling a growing insurgency in Thailand's southern, mainly Muslim provinces, which had been made worse by Mr Thaksin's brutal and incompetent policies. Whereas General Sonthi, who is himself a Muslim, argued that it was necessary to seek out and negotiate with the rebellion's leaders, Mr Thaksin's aides rejected any such idea.

Given General Sonthi's respectability, and the welter of accusations of corruption and abuse of power against Mr Thaksin, many Thais may be ready to give him and his fellow plotters a chance to show the sincerity of their promises. But it is noteworthy that even the *Nation*, a virulently anti-Thaksin daily, has refrained from cheering the coup that brought down its arch-foe. Thai society, it said, believed the generals had done “the wrong thing for the right reason”. And if they were slow to return power to the people, it would start to look as though Mr Thaksin were a pretext, not the real reason, for their coup.

The millions of Thais who voted Mr Thaksin into office in 2001 and 2005, and who would probably have put him back there again, may be forgiven for wondering why their opinions are being disregarded. They are mostly poorer, rural Thais with little prospect of overcoming the might of the armed forces or the slick arguments of Bangkok's sophisticates, who will be relieved to see the back of Mr Thaksin, aghast though they have been to see tanks on the streets of the capital.

Mr Thaksin had many deep flaws. The gross conflict of interest between his business affairs and his regulatory and lawmaking powers was among the least of them. Far worse were his constant attempts to pack independent institutions with cronies; his brutal “war on drug dealers” (which was no less than a licence for extra-judicial killings); and his gross mishandling of the southern insurgency.

But his critics among Bangkok's chattering classes were a little too ready to sniff at his attempts to do something for the broad mass of poorer Thais, in a way that few political leaders before him had ever done. He may have had his eye mainly on the electoral returns of such policies, but his schemes to offer cheap health care and foster economic development in rural villages did genuinely benefit many.

Heart at home, head abroad

The generals insist Mr Thaksin is welcome to return home, and even to stand in the next election. But the various court cases pending against him, and the others that seem bound to follow now that he is out of power, will make him think twice before coming back. No wonder he abandoned his plans to return to Bangkok this week and flew instead to London.

Why on earth did he depart on such a long foreign trip, given the strength of the rumours about coup plots? Could he have been so confident in his powers that he felt he could safely risk it? Or did he realise his end was nigh, and decide it was better to be deposed in his absence, thereby preserving his liberty, and maybe even his life? Perhaps, as so often in Thailand's tumultuous political history, the full story will never be known.

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National security

The uses of scare-talk

Sep 21st 2006 | WASHINGTON, DC
From The Economist print edition

The Republicans think talking about terrorism can save them from defeat in November. A new poll suggests they may be on to something

Reuters

HOW worried should Americans be about terrorism? Pete Hoekstra, the Republican chairman of the House intelligence committee, cites the story of Rick Rescorla, the late security chief at Morgan Stanley's old office in the World Trade Centre. Rescorla predicted that terrorists might try to blow up the twin towers with a truck bomb. In 1993, they tried. Rescorla predicted that they might try to attack with a commercial aircraft. His suggestion that the firm move to New Jersey was rejected, but his insistence on regular evacuation drills meant that, on September 11th 2001, all but six of Morgan Stanley's 2,800 staff in the World Trade Centre survived. The six who died included Rescorla himself, who went back in to get more people out.

Mr Hoekstra told this story at a press conference on September 20th unveiling his committee's new report on al-Qaeda. His message was that America is at war, that the battleground is the whole planet, and that radical Islamist terrorists could strike anywhere. Al-Qaeda, he said, had “morphed into a decentralised entrepreneurial organisation” of exceptional speed and agility. He warned against the complacent view that America, unlike Britain, has no problem with home-grown Islamist radicals: American prisons and universities might well become a breeding ground for the ideology of terror.

The previous day, President George Bush delivered a similar message to a global audience. Addressing the UN General Assembly in New York, he said it was “clear that the world is engaged in a great ideological struggle” between “the enemies of humanity” and “moderate people who work for peace”.

The same day, his deputy, Dick Cheney, told an audience of carmakers that the terrorists plan to seize control of a country in the Middle East, use it as a base from which to overthrow other governments and eventually set up “a totalitarian empire” stretching from Spain to Indonesia. He added that although the terrorists “cannot hope to beat us in a stand-up fight”, they are “convinced they can break the will of the American people.”

The common theme is no coincidence. Republican strategists think the best way to minimise their losses on November 7th is to talk non-stop about terrorism. If the latest Gallup/*USA Today* poll is to be

believed, the plan is working. Mr Bush's approval rating has lifted to 44%, up from a trough of 31% in May. More important, likely voters were evenly divided (48%-48%) between those who favoured Republican candidates for Congress and those who favoured Democrats.

If accurate—a big if—this is awful news for the Democrats. Conventional wisdom in Washington says they will win control of the House of Representatives, where all seats are up for election. The Senate, where only a third of the seats are to be contested, will be tougher, but some Democrats think they have a chance. Their problem is that although they enjoy a comfortable lead among registered voters (51%-42% in the Gallup poll, for example), they do far less well among those who say they will probably vote. And only the votes of those who actually vote are counted.

Lower petrol prices have certainly boosted the Republicans. But the Gallup poll found specific evidence that Mr Bush's strategy of vowing again and again to catch or kill terrorists is helping his party. Gallup discovered that among registered voters who think terrorism is the most important issue, far more think Republicans would do a better job than Democrats in fighting it (68%-17%). Among those who said the war in Iraq was their top issue, it was the other way around: 60% thought Democrats would handle Iraq better, while only 23% said Republicans would. So if the Republicans can maximise the number of people thinking about terror on election day, maybe they can hang on to both arms of Congress.

Some news helps them: for example, the alleged British plot to blow up transatlantic airliners. And advertisements put out by pro-Republican pressure groups add unsubtle mood music. One from the Centre for Security Policy urges Americans to “Vote as if your life depends on it. Because it does.” Another, from a group called Progress for America, states simply that “These people want to kill us.”

Meanwhile, with only a few days left before Congress's pre-election recess, Mr Bush is struggling to persuade lawmakers to pass two laws he says he needs to fight terrorism. One concerns wire-tapping; the other is about how to deal with captured terrorist suspects. Mr Bush argues that the intelligence services should be allowed to eavesdrop on people in America suspected of terrorist links when they call their contacts abroad, without having to waste time obtaining a warrant. He also believes that the CIA should be allowed to use coercive techniques to extract information from captured terrorists. His critics retort that warrantless wire-tapping is an invasion of Americans' privacy, and that if you let spooks rough up suspects even a bit, it is a slippery slope to torture.

On September 20th the House intelligence committee considered a compromise that would allow warrantless snooping if the president believes an attack is “imminent”. The new bill, which also allows for greater congressional oversight of such surveillance, could be voted on next week, but would need to be reconciled with whatever the Senate passes.

The question of what to do with top al-Qaeda detainees is more fraught. The CIA says it has gained life-saving intelligence from the harsh interrogation of people such as Khalid Sheikh Mohammed, the alleged architect of the attacks of September 11th 2001. It has reportedly agreed to stop waterboarding people. But it is unclear which subtleties it still plans to employ.

Mr Hoekstra argues that CIA agents need to know what they can and can't do; current law is too vague. Others worry that any attempt to spell out what America thinks the Geneva Conventions mean will be seen as an attempt to re-write it. Lindsey Graham, one of three Republican senators blocking Mr Bush's proposals on the subject, predicts that other nations would see that as a licence to re-write the treaty to suit their own secret police, which “would be disaster”. “We cannot have a great nation,” he told CBS, “when we start re-defining who we are.”

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Charitable giving

The other Billanthropy

Sep 21st 2006 | NEW YORK
From The Economist print edition

Doing good the Clinton way

AP

Basking in the limelight again

SIX years out of the White House—and maybe two years before he returns there—Bill Clinton's star is again burning brightly. The former president is feeling well, his quadruple bypass behind him. The glaring faults of his successor make his own mistakes in office look less bad by the day. The *New Yorker* has just run 24 cooing pages on his post-presidency. *Fortune* has put his photo on its cover, captioned “The Power of Philanthropy”, to illustrate an article about his Clinton Foundation, timed to mark the second annual meeting, in New York this week, of its Clinton Global Initiative (CGI).

The CGI has been called many things. A meeting of the Bill Clinton Fan Club, for instance—although this year Rupert Murdoch and Laura Bush are speaking. Or a rival to the World Economic Forum in Davos—although this year, his fears calmed, the founder of Davos, Klaus Schwab, is in attendance.

But the most accurate description of the CGI is the Philanthropy Oscars. The event is pure showbiz in a good cause. Members of the CGI are greeted with a gift of a Patagonia bag stuffed with goodies, including a mobile phone, CGI cufflinks, a remote-control toy aircraft and a pack of playing cards featuring “52 Ways to Improve the World”. They are encouraged to make bold philanthropic commitments (failure to follow through means you are not invited back, supposedly), and the most successful philanthropists are honoured. All the while, Mr Clinton presides like a white-haired, earnest version of Jon Stewart.

To his enemies, Mr Clinton's ability to rebrand himself as a great philanthropist without actually giving away much of his own money is yet more proof of the great deceiver's dark powers. Doubly so, given that one of the main focuses of the Clinton Foundation is HIV/AIDS in Africa—something that Mr Clinton freely admits he did too little about when he was president.

Yet, much to its credit, the Foundation has helped to reduce sharply the price of anti-retroviral drugs in Africa. And in this current age of philanthrocapitalism, where charity is increasingly pursued using modern business methods, the value should not be underestimated of Mr Clinton's marketing nous, networking magic and power to get everyone—philanthropists, NGOs, governments, companies—to sit down together and thrash out problems. Bill Gates, the original Billanthropist, may inspire other billionaires to give through the sheer scale and impact of his gifts. But to many a modern tycoon, the possibility of generosity being rewarded with a night on the town with the playboy president may be bigger motivation still.

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Muslims in Minnesota

Finding a voice

Sep 21st 2006 | MINNEAPOLIS
From The Economist print edition

Coming soon, the first minaret and the first congressman

ON SEPTEMBER 8th ground was broken for the new Masjid An-Nur mosque in north Minneapolis, from which the first minaret seen in Minnesota will pierce the prairie sky. A few days later one of the mosque's more famous worshipers, Keith Ellison, won the state's Democratic primary in the deeply Democratic 5th District. In so doing, Mr Ellison will almost certainly become America's first Muslim congressman, as well as the first black to represent anywhere in Minnesota.

In this once lily-white Lutheran state, these two events point to deep changes. More immigrants arrived in Minnesota in 2005 than in any of the past 25 years. Immigrants from Muslim countries, especially Somalia and Ethiopia, have made up a sizeable part of this wave. Estimates of the number of Muslims in Minnesota range from 40,000 to more than 100,000 and perhaps as many as 150,000.

These are big numbers for a state that had a tiny Muslim population just ten years ago. All the same, one might think that another state with a larger concentration of Muslims—Michigan, perhaps—would have produced a Muslim member of Congress sooner. Four Muslims ran for seats in 2004, two for the Senate and two for the House, but none made it out of the primaries.

The difference in Minnesota seemed to be a sophisticated grassroots campaign, which turned out thousands of new immigrants who had never before voted, or done anything in politics, on a day normally dominated by hard-core party insiders. That machine is the political legacy of Senator Paul Wellstone, who died in a plane crash in 2002. Within a month of his death his supporters established Wellstone Action, which has more than 100,000 members and has trained almost 11,000 people in grassroots campaigning methods and progressive political action.

New immigrants, many of whom were Muslims, seem to have accounted for thousands of the voters who turned up on primary night to support Mr Ellison. Without those votes, he might well not have prevailed over his closest opponent, Mike Erlandson, the former chairman of the Democratic Farmer-Labour Party (DFL).

Those Muslim connections, of course, are also fodder for his rivals. Mr Ellison is a former criminal defence lawyer and state representative who converted from Catholicism to Islam when he was 19. In 1995 he helped to organise the Million Man March—a gathering of blacks in Washington to proclaim unity and responsibility—and thus found himself in the orbit of Louis Farrakhan, the head of the Nation of Islam, who is notorious for his anti-Semitic rantings.

Mr Ellison says he has never met Mr Farrakhan. Nonetheless, his Republican opponents and a cadre of conservative bloggers are making merry with his past associations. The Republican Party recently dubbed the DFL “the party of Ellison.” That may be close to the truth. Progressives welcome him as a refreshing change from the party stalwarts who, in recent years, have tended to lose races.

Muslim Democrats see in Mr Ellison someone who can stick up for them as they face suspicion and intimidation. Many of them supported him quietly, for fear of a backlash. But his victory may bring them out into the open—not only in Minnesota, but across the country.

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Urban renewal

Up in arms about the Yards

Sep 21st 2006 | BROOKLYN
From The Economist print edition

A project recalls the mistakes of the past

THE Atlantic Yards, in the heart of Brooklyn, are now nothing more than a sunken set of tracks where trains are cleaned. But if all goes as planned, the yards and the blocks around will be reborn as 16 glittering towers, with an arena as their crown jewel. The $4.2-billion scheme is one of the most ambitious in New York's history, and one of the most controversial.

Supporters—including George Pataki, the governor, and Michael Bloomberg, the mayor—say this is a model project, both for its fine design and for its civic-mindedness. Others are less enthralled. Community groups, scrambling to make their point before a period of public comment ends on September 29th, want the project either changed radically or stopped altogether.

Urban renewal in New York has a turbulent history. Under Robert Moses, the “master-builder” who shaped the city from the 1930s to the 1960s, urban renewal became voracious, often using eminent domain to snatch private property and replace lively neighbourhoods with self-contained housing projects that became barren and dangerous. A backlash against Moses ushered in the next era of urban planning, which aimed to improve the existing community rather than replace it.

Bruce Ratner, of Forest City Ratner Companies, hopes to create a new, dazzling model of development with the Atlantic Yards. He is being encouraged by Dan Doctoroff, the deputy mayor for economic development, New York's most ambitious planner since Moses. The city and state have promised to chip in $100m each and provide a host of tax breaks, possibly worth more than $1 billion. The project's first selling point is its designer, Frank Gehry. The second is the Nets basketball team, which Mr Ratner bought in 2002 and wants to move from New Jersey to the new arena, giving a team to a borough that has ached for one since the Dodgers left in 1957. The third is jobs: 15,000 created by construction over ten years, and 3,800 more once the project is complete. But Mr Ratner's juiciest bait is affordable housing. Condominiums would be sold at market rate, but half of the rental units, some 2,250 apartments, will be reserved for low-, moderate- and middle-income tenants.

Critics are not mollified. The project relies on public money yet flouts the community, says Julia Vitullo-Martin of the Manhattan Institute, a think-tank. The state will seize private property labelled as “blight”—including a luxury condominium building—under New York's broad eminent-domain law. The plan's “publicly accessible” parks, says the Municipal Art Society, a respected urban planning group, will in effect be private gardens. Mr Gehry's buildings are dramatically out of scale with the rows of brownstones nearby. Increased traffic will clog streets and extra pupils will strain local schools. The project will not connect the surrounding neighbourhoods; it will disrupt them.

These problems could be addressed if the project went through the city's land-review process. This subjects most big projects to hearings and approval by many local officials, including the mayor and city council, and has often curbed bad plans. But Mr Ratner is working instead with the Empire State Development Agency (ESDC), a state body that can sponsor projects without consulting local governments. After two perfunctory public hearings, the ESDC will draw up a final plan for approval by the governor and the speakers of the state Senate and Assembly.

Opponents are not giving up. Develop Don't Destroy Brooklyn, a coalition of 21 community groups, plans to challenge the state's use of eminent domain, although a Supreme Court decision last year allows condemnation in the name of economic development. Others, resigned to Mr Ratner's scheme, are turning to Eliot Spitzer, the attorney-general and likely next governor, to ask him to curb the power of the ESDC, which is backing other big plans in the city. New York is being reshaped; the question is how.

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Food safety

Sickening spinach

Sep 21st 2006 | PETALUMA, CALIFORNIA
From The Economist print edition

Those healthy green leaves cause a terrible scare

A SMALL card sits above an empty shelf in the Whole Foods store in Petaluma, California. “Consumers are advised NOT to eat fresh bagged spinach at this time. As a precaution, Whole Foods Market has temporarily removed ALL fresh spinach and fresh salad mixes containing spinach from its stores.”

On September 14th the Centres for Disease Control and Prevention in Atlanta issued the first of several daily alerts concerning an outbreak of *E. coli 0157:H7*, a potentially lethal pathogen typically associated with adulterated beef. Investigators had traced it to consumption of fresh raw spinach sold in bags. A few days later, an investigation conducted by the Food and Drug Administration (FDA) had narrowed down the culprits to a California-based grower, Natural Selection Foods, and at least one of its distributors. So far, a 77-year-old woman in Wisconsin has died from eating spinach traced back to Natural Selection, and 146 people in 23 states are ill, some very seriously. Half of the victims have been hospitalised, a high rate that may indicate an especially virulent strain of *E. coli*.

Investigators continue to search for the cause of the outbreak. They have scoured the company's processing plant as well as the farms that grow the spinach, looking at everything from irrigation water to the proximity of livestock, with no sure connections made so far. The fact that Natural Selection is in California's Salinas Valley has raised alarms, however. According to the FDA, fresh produce from the valley, including spinach, has been the source of nine *E. coli* outbreaks since 1995.

Moreover Natural Selection, which supplies several supermarket chains across the United States with conventionally produced fresh spinach, is also the nation's largest grower and shipper of certified organic produce, under its Earthbound Farm brand. If organic spinach becomes implicated, the financial consequences for the organic sector of the fresh produce market, which prides itself on its purity, could be severe.

But with the FDA advising consumers not to eat fresh spinach from any source until further notice, the outbreak could ruin California's whole spinach industry. The state grows about three-quarters of the American crop. In recent years the market for fresh spinach has benefited hugely from what one producers' spokesman calls “a great health profile”. In 2005, per capita consumption in America was forecast at 2.2 pounds (one kilogram), up from just 0.6 pounds ten years ago. That total isn't likely to increase again for a while.

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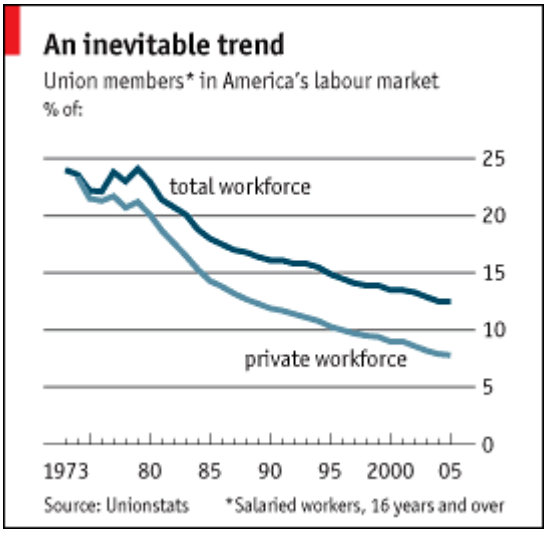
Unions and politics

The limits of solidarity

Sep 21st 2006 | WASHINGTON, DC
From The Economist print edition

Boosting unions won't do much for America's workers



WALK into the Washington headquarters of the AFL-CIO, America's biggest federation of trade unions, and you see the words of Virgil on a large, colourful mosaic: *Labor omnia vincit* ("Work conquers all"). The phrase seems cruelly ironic. The share of American workers carrying union cards has plunged from over 20% in 1980 to under 13% in 2005, and almost half of those are government employees. Far from conquering all, organised labour seems heading for extinction. Except that sometimes extreme weakness spawns an odd sort of strength, and the underdog starts barking.

Something like this may be happening now in America. As the national debate focuses on worries about rising income inequality and the "squeezed" middle class, Paul Krugman, a prominent liberal commentator, has argued that government policies rather than market forces are to blame. Among the policies that need fixing, he thinks, is an anti-union climate.

Mr Krugman's view is striking, since he is no anti-marketeer but a distinguished economist and free-trader. The stance of the Democratic Leadership Council (DLC), the voice of pro-business Clintonian Democrats, is equally notable. The DLC is supporting legal reform to make union organising easier, arguing that the "careful balance between employers and employees...is in peril." In sum, the centre-left has joined the left in accepting that helping workers means strengthening unions.

Union supporters are about to be galvanised further by the National Labour Relations Board (NLRB), the politically-appointed body that interprets American labour law. The NLRB is about to rule on three cases involving nurses and load-foremen, known collectively as the *Kentucky River* cases, and its findings will determine which jobs may be classified as "supervisory". Since supervisors do not have a legal right to collective bargaining, broadening the range of jobs deemed supervisory reduces the pool of workers who can be unionised.

No one doubts that the rulings will be bad for the unions. One estimate by the Economic Policy Institute (EPI), a pro-union think-tank, is that up to 8m people could lose the right to organise. Stewart Acuff, a top official at the AFL-CIO, reckons that figure could include 2m existing union members (or 13% of current union membership). That would be a crushing setback. The biggest impact would be in health care, one of the few industries where the unions have been making headway. The EPI estimates that more than one-third of registered nurses could be reclassified as supervisors. Mr Acuff worries that the *Kentucky River* cases will be the "biggest blow to labour" since the Taft-Hartley Act of 1947, which banned the closed shop.

Killing the secret ballot

Together with other Bush-era decisions, such as denying collective-bargaining rights to temporary workers, the *Kentucky River* cases convince the left that the Bush administration is waging war on unions. This is stretching it: the NLRB is re-interpreting the definition of "supervisors" because the Supreme Court has struck down earlier interpretations as too narrow. Still, anti-Bush grievances are fuelling the unions' plans for a counter-attack.

The counter-attack centres on the inaptly-named Employee Free Choice Act. Passing this measure has become the top political objective of both the AFL-CIO and Change to Win, a group of unions that broke away from the main federation a year ago. Both organisations have vowed to support only those politicians who endorse the bill, and to fight against those who do not. They have convinced all but four Democrats in the House of Representatives (along with 15 Republicans) and 42 Democrats in the Senate. The prospect of a Democratic House of Representatives, coupled with the possibility of Democratic gains in the Senate, has strengthened the chances that the bill will pass, particularly if a Democrat wins the White House in 2008.

The bill would stiffen punishments for employers who intimidate workers trying to form a union. It would mandate third-party arbitration if unions and bosses cannot agree on a contract. And, most important, it would get rid of secret ballots as a prerequisite for union recognition. Under the 1935 Wagner Act, which gave American workers the right to collective bargaining, employers do not have to recognise a union unless a majority of workers vote in favour of one in a special secret ballot.

Secret ballots are a cornerstone of democracy. But unions argue that, far from protecting workers, they leave huge scope for employers to delay the vote and to intimidate workers beforehand. Instead they want union recognition on the basis of “card-check”, where employers have to accept a union when a majority of workers sign a card saying they want one.

The case for abolishing secret ballots is hard to make. It is odd to argue that signing a public petition is less open to intimidation (by both unionists and employers) than a privately cast ballot. Historically, Americans have had little truck with the idea. Unions pushed for card-check laws in 1978 but, despite Democratic control of Congress and Jimmy Carter in the White House, they failed. Other countries have also rejected the idea. In Canada, for instance, recent labour-law reforms have shifted to an election-based system.

So why are America's unions so keen on card-check? The answer is desperation. Worker ballots are proving a barren recruiting ground for union organisers. Although the unions now win slightly more elections than they used to (over 60% in 2005), both the number of elections and the number of workers covered have plunged.

Instead union organisers have shifted to “corporate campaigns” designed to pressure firms into allowing unionisation by card-check. These campaigns—highly visible, public attacks on corporate reputations—are becoming ever more common, particularly in service industries such as hotels and health care where many unions foresee growth in future. Some unions have scored notable successes. Cingular Wireless, a mobile-phone company, has reached a card-check agreement with the communication workers' union. Many Hilton and Starwood hotels have recently signed deals with UNITE HERE, a big union representing hotel staff. Union leaders reckon that 70% of their new recruits now come from card-check campaigns.

The unions' counter-attack is based on two presumptions: that stronger legal rights would reverse their loss of members, and that bigger membership would help workers. Both claims are debatable. Shifting to card-check may help stem the unions' decline, but it will not herald their renaissance. And falling union strength explains only a small part of America's rising inequality and wage stagnation.

Victors or spoilers?

Economists differ on whether the unions' troubles are caused by rising legal obstacles and employer opposition, structural changes in the economy or because workers no longer want to join unions. The chief proponent of the employer-opposition view is Richard Freeman of Harvard University, who has long argued that such opposition explains between one-quarter and a half of the unions' falling membership. He points to polls suggesting that between 30% and 50% of non-union workers would vote for a union if they had a chance to do so, and notes that an entire industry of consultants has sprung up to advise firms on how to frustrate union votes. If the shift to card-check reduced employers' ability to deny workers a choice, unions could get a boost.

Evidence from Canada, where legal reforms went in the opposite direction, suggests that tweaks to the law do make some difference. Chris Riddell of Queen's University in Kingston, Ontario reckons that the shift from card-check to mandatory elections in many Canadian provinces could have exacerbated union decline by as much as five percentage points. By extension, shifting to card-check could raise America's unionisation rate by a few percentage points, other things equal.

But other things are not equal. Despite varying legal regimes, union density has fallen across most rich countries and some poor ones in recent decades, often more steeply than in America. That suggests that structural economic shifts, rather than specific policies, have played a role.

Thanks to globalisation and technological innovation, fewer workers are employed in the heavy industries where unions used to be strong. Larry Katz of Harvard University reckons that these employment shifts explain up to one-third of the decline in America's unions. Whatever their job, however, Americans who work for private employers are less likely to join a union than a generation ago. Union membership has plunged not only in the shrinking manufacturing sector but also in fast-growing service industries, such as entertainment, retailing and finance. The share of unionised workers in manufacturing fell 40% between 1984 and 2001. The share of union workers in the retail industry fell by the same amount, though from a much lower base.

Henry Farber of Princeton reckons that this may be because unions have become less attractive to workers. Thanks to heightened competition, unions can no longer protect against job losses, as Detroit's carworkers know only too well. Sophisticated human-resource departments now allow employers to replicate many of the unions' traditional functions, such as dealing with workers' grievances. In sum, legal reform might redress union decline. But it will not dramatically reverse it.

What of the unions' second conceit: that more unionisation would help American workers? The answer is that it might help some—but at a price. Unions have historically dampened inequality. Pay scales in unionised firms tend to be flatter than in non-unionised ones. David Card, an economist at the University of California at Berkeley, reckons that about 15% of the increase in wage differentials among men since the early 1980s, though none of the increase among women, can be explained by declining unionism. Most of that effect was concentrated in the 1980s. Today's rising inequality is mainly thanks to soaring pay at the top of the income scale. Its causes lie in the structural shifts—globalisation and technical change—that have also weakened unions.

All this suggests that card-check is an odd priority for centrist Democrats. After all, trade unions have obvious drawbacks as well as modest attractions. Whenever they win their members higher wage rises than in non-unionised firms, this money has to come from somewhere. If it comes from profits, investment—and future economic growth—may suffer. If firms pass on the higher costs to their customers, the result is not always the sort of redistribution that Democrats want to see. Progressives may cheer at raising cleaners' pay and charging hotel customers extra. But what about a fast-food joint or big-box retailer, whose customers are no richer than its workers?

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Lexington

Poison Ivy

Sep 21st 2006
From The Economist print edition

Not so much palaces of learning as bastions of privilege and hypocrisy

AMERICAN universities like to think of themselves as engines of social justice, thronging with “diversity”. But how much truth is there in this flattering self-image? Over the past few years Daniel Golden has written a series of coruscating stories in the *Wall Street Journal* about the admissions practices of America's elite universities, suggesting that they are not so much engines of social justice as bastions of privilege. Now he has produced a book—“The Price of Admission: How America's Ruling Class Buys Its Way into Elite Colleges—and Who Gets Left Outside the Gates”—that deserves to become a classic.

Mr Golden shows that elite universities do everything in their power to admit the children of privilege. If they cannot get them in through the front door by relaxing their standards, then they smuggle them in through the back. No less than 60% of the places in elite universities are given to candidates who have some sort of extra “hook”, from rich or alumni parents to “sporting prowess”. The number of whites who benefit from this affirmative action is far greater than the number of blacks.

The American establishment is extraordinarily good at getting its children into the best colleges. In the last presidential election both candidates—George Bush and John Kerry—were “C” students who would have had little chance of getting into Yale if they had not come from Yale families. Al Gore and Bill Frist both got their sons into their alma maters (Harvard and Princeton respectively), despite their average academic performances. Universities bend over backwards to admit “legacies” (ie, the children of alumni). Harvard admits 40% of legacy applicants compared with 11% of applicants overall. Amherst admits 50%. An average of 21-24% of students in each year at Notre Dame are the offspring of alumni. When it comes to the children of particularly rich donors, the bending-over-backwards reaches astonishing levels. Harvard even has something called a “Z” list—a list of applicants who are given a place after a year's deferment to catch up—that is dominated by the children of rich alumni.

University behaviour is at its worst when it comes to grovelling to celebrities. Duke University's admissions director visited Steven Spielberg's house to interview his stepdaughter. Princeton found a place for Lauren Bush—the president's niece and a top fashion model—despite the fact that she missed the application deadline by a month. Brown University was so keen to admit Michael Ovitz's son that it gave him a place as a “special student”. (He dropped out after a year.)

Most people think of black football and basketball stars when they hear about “sports scholarships”. But there are also sports scholarships for rich white students who play preppie sports such as fencing, squash, sailing, riding, golf and, of course, lacrosse. The University of Virginia even has scholarships for polo-players, relatively few of whom come from the inner cities.

You might imagine that academics would be up in arms about this. Alas, they have too much skin in the game. Academics not only escape tuition fees if they can get their children into the universities where they teach. They get huge preferences as well. Boston University accepted 91% of “faculty brats” in 2003, at a cost of about $9m. Notre Dame accepts about 70% of the children of university employees, compared with 19% of “unhooked” applicants, despite markedly lower average SAT scores.

Why do Mr Golden's findings matter so much? The most important reason is that America is witnessing a potentially explosive combination of trends. Social inequality is rising at a time when the escalators of social mobility are slowing (America has lower levels of social mobility than most European countries). The returns on higher education are rising: the median earnings in 2000 of Americans with a bachelor's degree or higher were about double those of high-school leavers. But elite universities are becoming more socially exclusive. Between 1980 and 1992, for example, the proportion of disadvantaged children in four-year colleges fell slightly (from 29% to 28%) while the proportion of well-to-do children rose substantially (from 55% to 66%).

Mr Golden's findings do not account for all of this. Get rid of affirmative action for the rich, and rich children will still do better. But they clearly account for some differences: “unhooked” candidates are competing for just 40% of university places. And they raise all sorts of issues of justice and hypocrisy. What is one to make of Mr Frist, who opposes affirmative action for minorities while practising it for his own son?

The poor left behind

Two groups of people overwhelmingly bear the burden of these policies—Asian-Americans and poor whites. Asian-Americans are the “new Jews”, held to higher standards (they need to score at least 50 points higher than non-Asians even to be in the game) and frequently stigmatised for their “characters” (Harvard evaluators persistently rated Asian-Americans below whites on “personal qualities”). When the University of California, Berkeley briefly considered introducing means-based affirmative action, it rejected the idea on the ground that “using poverty yields a lot of poor white kids and poor Asian kids”.

There are a few signs that the winds of reform are blowing. Several elite universities have expanded financial aid for poor children. Texas A&M has got rid of legacy preferences. Only last week Harvard announced that it was getting rid of “early admission”—a system that favours privileged children—and Princeton rapidly followed suit. But the wind is going to have to blow a heck of a lot harder, and for a heck of a lot longer, before America's money-addicted and legacy-loving universities can be shamed into returning to what ought to have been their guiding principle all along: admitting people to university on the basis of their intellectual ability.

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Mexico's presidential election

The left cannot hold

Sep 21st 2006 | MEXICO CITY
From The Economist print edition

Mr López Obrador's campaign of "civil resistance" starts to fizzle

"THE worst are full of passionate intensity," W.B. Yeats declared of religious zealots. The same might be said of Andrés Manuel López Obrador who, nearly three months after Mexico's presidential contest, still refuses to accept that he lost. On September 16th, Mexico City's former left-wing mayor declared himself president-elect and vowed to set up a rival government to that of Felipe Calderón, victorious candidate of President Vicente Fox's National Action Party (PAN). Mr Calderón was officially proclaimed the election winner by the federal electoral tribunal on September 5th after a series of legal challenges and a partial recount that put him just 233,831 votes ahead.

Mr López Obrador's defiant proclamation came at a "National Democratic Convention", a gathering of supporters he had called in capital's central square, the Zócalo, on Mexico's independence day. He had predicted that around 1m would attend. In the event, the crowd was about the same size as his margin of loss in the election—substantially smaller than the numbers he had been attracting to his earlier rallies throughout the summer. Strangely, for someone who had mounted his campaign of "civil resistance" in protest against alleged counting inaccuracies in the presidential vote, his own "election" along with other votes by the convention were all done on a show of hands. This time there was no question who had won; Mr López Obrador carried the day with near unanimity.

But Mr López Obrador's protest movement appears to be fizzling out. His coalition, "For the Good of All", composed of his Party of the Democratic Revolution (PRD), along with two small left-wing parties, Convergencia and the Worker's Party, has begun to fray, with Convergencia recognising Mr Calderón's victory. (The three coalition parties have nevertheless pledged to vote as a block in Congress.) Since the electoral tribunal's ruling, Mr López Obrador has been subjected to a barrage of criticism in the left-wing press. Members of his own party, such as Cuauhtémoc Cárdenas, who himself lost the 1988 presidential election as a result of what is widely believed to have been unabashed fraud by the then ruling Institutional Revolutionary Party (PRI), have called on him to acknowledge defeat. Several of his close advisers privately admit that they, too, would like him to concede. His supporters, who for nearly two months had camped out in the Zócalo and along Reforma, the city's main avenue, have now gone home. (The encampment was disbanded, with Mr López Obrador's agreement, in large part to avoid confrontation with the armed forces during the annual independence-day parade.)

Mr López Obrador has nevertheless succeeded on several occasions in intimidating Mr Fox. The president

was prevented by PRD members from delivering the annual state-of-the union address in Congress on September 1st. Rather than celebrating independence day with the traditional cry of "*¡Viva México!*" on the night of September 15th in the Zócalo, Mr Fox went to Dolores Hidalgo, birthplace of Mexico's revolution, so as to avoid a clash with Mr López Obrador's supporters.

But these are victories of style rather than substance. His civil resistance movement can do little to help the poor and marginalised whom he claimed to want to represent. Indeed, Mr López Obrador is beginning to resemble Subcomandante Marcos, leader of the Zapatista guerrilla movement, in his shrewd manipulation of the media to draw attention to himself while actually delivering very little.

Meanwhile, Mr Calderón is quietly preparing the transition. He and his advisers are trying to be conciliatory. Juan Camilo Mouriño, the head of his transition team, says that Mr Calderón is seeking to open "natural spaces of dialogue" in the legislature and with PRD governors. Mr López Obrador has threatened to get PRD legislators physically to prevent Mr Calderón from taking the oath of office on December 1st. But it is far from certain that they will bow to his will and, even if they do, it is not clear whether Mr Calderón is obliged under the law to take the oath in Congress.

Mr López Obrador first rose to national prominence in 1994, when he led a march from his native Tabasco, in the country's south, to Mexico City to protest his loss in the state governor's race. He is now headed back to Tabasco to campaign on behalf of his party's candidate for governor in elections to be held next month. Mr Calderón, together with much of the Mexican left, might be forgiven for hoping that this time Mr López Obrador will be returning home for good.

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Bolivia

Land battles

Sep 21st 2006 | UCUREÑA
From The Economist print edition

Evo Morales collides with the commercial farmers

Reuters

Not quite yet time to celebrate

THE ceremony was elaborate and heavy with political symbolism. Last month, to the accompaniment of traditional dancers and musicians, Evo Morales, Bolivia's first indigenous president, garlanded with flowers and mounted on a Chinese tractor, officially launched his ambitious land reform by handing out 2,301 titles of state-owned land. He has promised to redistribute a total of 20m hectares (50m acres), including privately owned land identified as "unproductive", obtained illegally or used for speculation, by the end of his term in 2011. But the opposition and commercial farmers are seeking to block the reforms.

Mr Morales was elected last December on a pledge to "refound" South America's poorest republic on lines that are fairer to its indigenous people. So far, he has shown a flair for political theatre, but has failed to deliver on his main promises. The nationalisation of the energy industry, decreed in May, was last month "temporarily suspended" and last week the energy minister, Andrés Soliz Rada, resigned. This month, the Constituent Assembly degenerated into a fisticuffs, followed by a walk-out of delegates and workers' strikes in protest against Mr Morales's attempt to force through constitutional changes by simple majority vote.

Land reform is his third big initiative. For its official launch, he chose Ucureña, a small dusty town near Cochabamba, where a previous revolutionary government launched Bolivia's first land reform in 1953. That was successful; the near-feudal estates of the Altiplano, the high Andean plain, were split into smallholdings and given to the Aymara- and Quechua-speaking former serfs. A second reform in 1996 under Gonzalo Sánchez de Lozada, a liberal, set up a mechanism for drawing up deeds of ownership for Indian lands and introduced a land tax.

Even so, almost 90% of the country's productive land is still owned by just 50,000 families, while four-fifths of the rural population remain poor. Mr Morales hopes to redress this with his "agrarian revolution" in favour of indigenous groups and workers' communities. It will focus on the eastern lowlands, settled since 1953 by commercial farmers producing soya, cotton and other crops worth $600m a year, much of it for export. The enraged farmers have vowed to set up self-defence groups to protect their land.

But the government says that many of the farmers, who tend to be among the whiter Bolivians, owe their lands to handouts from past military governments, some of it seized from Indian communities. Álvaro García Linera, the vice-president, has accused the farmers of practising "gangster-like systems of extortion, based on commercial, mercantile and political coercion". The farmers retort that they are

efficient entrepreneurs who are being targeted for political reasons and accuse the government of adopting a “fundamentalist” approach based on the principle that “if you're not Aymara or Quechua, you don't deserve land”.

They complain that the planned land distribution has already caused banks to curtail lending and scared off foreign investors. They fear the reform will also encourage deforestation. Many of the beneficiaries would be migrants from the Altiplano, with little knowledge of lowland farming. “If we don't work together in terms of technology and knowledge, this won't be a success,” says Gabriel Dabdoub of the Santa Cruz chamber of commerce.

Under the 1996 law, land can only revert to the state if its owners fail to pay the land tax. Mr Morales wants to change this to allow the state to take over land when it is not being worked, too. If Congress does not pass the necessary legislation, it should “shut down”, he says. The president has aroused the hopes of the poor. If these are frustrated, there could be violence. One man was killed in a clash with police after a land invasion in June. On September 20th poor farmers, indigenous groups and trade unionists began setting up roadblocks around Santa Cruz in protest against opposition attempts to block the reforms. Given the scale of rural poverty, there is a good case for land reform in Bolivia. But if this is to do more than just cause conflict, it will need to be based on a broad consensus and a careful application of the law.

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Alberta

Clever red-necks

Sep 21st 2006 | VANCOUVER
From The Economist print edition

It's not just the economy that is booming; schools are too

MANY eastern Canadians do not think much of Alberta's roaring economic success. They love putting down their wealthy western cousins as loutish rednecks who have the dumb luck to be sitting on pools of oil and natural gas. They do not seem to have noticed that the entire Albertan economy—not just the energy sector—is booming, growing faster than that of any other province. Maybe, with this kind of surging growth year after year, something more than a lucky inheritance is involved. It could be that Albertans are actually doing some things right in building their economy.

Many educators acknowledge that over the past 30 years Alberta has quietly built the finest public education system in Canada. The curriculum has been revised, stressing core subjects (English, science, mathematics), school facilities and the training of teachers have been improved, clear achievement goals have been set and a rigorous province-wide testing programme for grades three (aged 7-8), six (10-11), nine (13-14) and twelve (16-17) has been established to ensure they are met.

It is all paying off. Alberta's students regularly outshine those from other Canadian provinces: in 2004 national tests, Alberta's 13- and 16-year-olds ranked first in mathematics and science, and third in writing. And in international tests they rank alongside the best in the world: in the OECD's 2003 PISA study, the province's 15-year-olds scored among the top four of 40 countries in mathematics, reading and science (see table).

Alberta shines

Ranking of performances by 15-year-olds in Canadian provinces and PISA countries, 2003

	Mathematics	Reading	Science
1	Hong Kong	Finland	Finland
2	***Alberta***	***Alberta***	Japan
3	Finland	*British Columbia*	Hong Kong
4	South Korea	South Korea	***Alberta***
5	*British Columbia*	*Ontario*	South Korea
6	Netherlands	**Canada**	*British Columbia*
7	*Quebec*	*Quebec*	Liechtenstein
8	Liechtenstein	Australia	Australia
9	Japan	Liechtenstein	Macau
10	**Canada**	New Zealand	Netherlands

Source: Statistics Canada

Elsewhere in Canada, especially British Columbia and Ontario, dissatisfaction with public-school standards is increasingly driving parents to pack their children off to private schools. Over the past decade, the proportion of students in such schools has risen by 20% in Canada as a whole, and double that in Ontario. But the private system does not have the same appeal in Alberta, where some 80% of parents say they are happy with the public schools.

This is especially true in the province's capital of Edmonton, which is noted for its innovative system stressing choice, accountability and competition. Funding there is based on the number of students in a school. Each school controls its own budget, spending money on its own educational priorities (such as improving aboriginal-student results), while following the provincial curriculum. Students are free to (and 57% do) attend any school in the city, not just in their own neighbourhood. They can seek out schools specialising in the arts, sports, leadership skills, girls-only education, aboriginal culture, Mandarin, and many other alternative programmes—or simply choose the schools with the best academic results. Students in every grade are tested annually and their scores published.

The results are also used to improve teaching. There is currently a citywide push to ensure that all children in Edmonton can read competently by grade three (88% now can). Far from fearing private-school competition, the city's public system has embraced it: it has already absorbed three private religious schools (two Christian, one Hebrew). “In Edmonton,” says Angus McBeath, the city's recently retired schools chief, “the litmus test is that the rich send their kids to the public schools, not the private schools.”

Another litmus test is the extent to which Edmonton's ideas are being studied by educators from elsewhere (mostly the United States, but some also from Ontario and British Columbia) and are now being emulated. Pilot projects on the Edmonton model have already been launched by school boards in Colorado Springs, Oakland and New York City.

All this is not to say that they have all the answers in Alberta. Their rigorous measurement scheme has revealed that schools still need to do a lot better teaching aboriginal and immigrant children and ensuring that more students finish high school. At present, about 30% of students drop out early, compared with 25% for the country as a whole. That, Alberta's educators admit, is an embarrassing statistic. But in the province's red-hot economy, a 17-year-old with a driver's licence can drop out and easily make C$60,000 ($53,300) a year driving a lorry serving an oil-drilling camp. That's tough competition.

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Canada

Red coats with red faces

Sep 21st 2006 | OTTAWA
From The Economist print edition

A case of “extraordinary rendition”

AP

WITH their distinctive red serge tunics and wide-brimmed Stetsons, members of the Royal Canadian Mounted Police are a reassuring symbol of law and order for Canadians. All the more reason for national shock when an official inquiry reported this week that bungling by the national police force resulted in Maher Arar, a totally innocent Syrian-born Canadian, being labelled a terrorist and subjected to “extraordinary rendition” by America. After being seized at Kennedy Airport in New York in September 2002, Mr Arar was abducted to Syria, where he was secretly imprisoned, interrogated and tortured before being returned to Canada a year later.

The Mounties, as they are known, are not the only Canadian officials criticised by Dennis O'Connor, the Ontario judge charged with investigating Canada's role in the shameful affair. Diplomats unable to detect signs of torture, politicians who dithered about their response, and unidentified officials who tried to smear the unfortunate Mr Arar by leaking inaccurate information to the media, came in for their share of blame. But because the Mounties' power extends across the country—as well as being the federal force, they provide some local services too—they came under particular scrutiny. “People are uneasy,” said Michel Gauthier, a Bloc Québécois member of parliament. “First it was Maher Arar. Who will be next?”

The report shows just how easily this could happen. Mr Arar, an engineer, came to the Mounties' attention in October 2001, simply because he met a man they were investigating. They promptly asked America's customs officers to keep an eye out for him and his wife, describing them as “Islamic extremist individuals suspected of being linked to the al-Qaeda terrorist movement”. This, said the report, was “inaccurate, without any basis, and potentially extremely inflammatory in the United States in the fall of 2001”. Mr O'Connor said that American officials probably relied on this and other faulty information from Canada's police when they seized Mr Arar. American and Syrian officials refused to testify at the inquiry.

The report made 23 recommendations on how to improve the way Canada gathers and shares its anti-terrorism intelligence. The most important of these, according to Wesley Wark, head of the Canadian Association for Security and Intelligence Studies, is a proposal to draw firm lines between the federal police and the Canadian Security Intelligence Service. Responsibility for security intelligence was taken away from the Mounties when a separate intelligence service was created in 1984, partly in response to previous illegal activities by the federal force. The lines became blurred after a new Anti-terrorism Act in December 2001 made supporting terrorists a criminal offence.

The report also calls for beefed-up civilian oversight of the Mounties, who can and do withhold information and are not bound by the reports on them by the Commission for Public Complaints, which oversees their work. Stephen Harper, the prime minister, said the government intends to act quickly on the report's recommendations. That may not be easy, says Mr Wark. “Governments, especially new governments, tend to be awed by the secret people with their secret knowledge.”

Have the federal police permanently blotted their copybook with Canadians? Probably not, says Darrell Bricker, a pollster with Ipsos-Reid. “It's the Mounties, man. They're a national symbol. To shake that kind of bedrock support you need repeated and consistent problems.” Those may yet come. Three other Canadians who were investigated by the Mounties and later tortured in Syrian prisons want their cases reviewed. Meanwhile, Mr Arar has filed civil lawsuits against the Canadian, American, Syrian and Jordanian governments (he was briefly in Jordan before being transferred to Syria). Should those cases proceed, they are likely to revive criticism of Canada's red coats. The Mounties aren't out of the woods yet.

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Correction: Albano Harguindeguy and José Alfredo Martínez de Hoz

Sep 21st 2006
From The Economist print edition

In last week's issue, we said that Albano Harguindeguy, former interior minister under Argentina's military dictatorship, and José Alfredo Martínez de Hoz, its economy minister, were among junta leaders who had been convicted and imprisoned for human-rights abuses. They were not. Although placed under investigation, they were granted pardons (now revoked) before being formally indicted. Our sincere apologies for our error. This error was corrected online.

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About sponsorship

China's unions

A little solidarity

Sep 21st 2006 | BEIJING
From The Economist print edition

AP

Increased union membership generates cash for the government

THE Chinese Communist Party has always been swift to crush independent organisations of workers, but even its own puppet trade unions have had a hard time in recent years. Until recently at least, the burgeoning private sector has eschewed them and so too has its workforce, despite widespread abuses such as dangerous working conditions, derisory wages and forced overtime. But now the party-controlled unions are making a comeback. Is it time for bosses to worry?

Since late July the Chinese media have been crowing over a grudging decision by Wal-Mart, one of the most prominent foreign firms in China, to allow members of its 31,000-strong Chinese workforce to form trade unions. Wal-Mart had been discouraging this since it began operating in China in 1996, just as it does elsewhere, including in America, its home country. The company says unions are unnecessary for its employees. But the Chinese media reported that an order from President Hu Jintao earlier this year prompted official efforts to get Wal-Mart to change its mind. On July 29th in the coastal city of Quanzhou, workers at one of Wal-Mart's 60-odd supermarkets in China formed the company's first union there.

Wal-Mart had not been accused of any specific mistreatment of its workers. But it was accused of breaking a law which says that companies are not allowed to obstruct the formation of trade unions. An official survey conducted two years ago found that trade unions had been established in a mere 10% of half a million foreign-invested enterprises then registered in China. Wal-Mart, with its self-proclaimed anti-union stance, came under growing scrutiny—notwithstanding its large contribution to China's economy. The company says it bought $19 billion-worth of goods from China in 2004, amounting to some 15% of China's total exports to America in that year according to China's statistics (10% by America's).

But what of the other foreign-invested firms in China? The slow development of trade unions in these companies has been mainly a result of lack of interest among workers rather than opposition to union activity among managers. Unions in China are controlled by the Communist Party through an umbrella organisation, the All-China Federation of Trade Unions (ACFTU), to which all unions must be affiliated. Two decades ago, when China's economy was still mostly run by the state, almost all urban workers belonged to trade unions set up in the state-owned enterprises to which they belonged. At best these unions acted as mediators between management and workers rather than as champions of workers'

interests. They had little bargaining power—strikes and other forms of collective pressure being effectively banned (the right to strike was removed from China's constitution in 1982). Most union offices did little more than organise occasional entertainment and help the party monitor worker morale.

Since the 1990s the rapid growth of private, including foreign, enterprise and the widespread closure of state-owned firms has gutted unions from the urban workforce. It has also stripped the party of its own network of cells in workplaces, each of which once had both a union and a party committee. Even if newly established private enterprises employed party members, such people often neglected to organise cells and fell out of touch with the party itself.

Party rules require a cell in any enterprise with three or more party members. But even if members wanted to form one, they felt that management would disapprove. In state-owned enterprises, the boss often doubled as party chief. In private firms, even ones set up by party members, managers were often concerned that business secrets might be leaked and efficiency impaired by the existence of a separate power structure inside the business. And without party cells, there was little impetus to form unions. By 1999 union membership had fallen to 87m, down from a peak of 104m in 1995 (see chart).

This has been a blow to the authorities. For a party used to all-pervasive control, the withering of its grassroots organisations has left it feeling increasingly uneasy. In recent years wildcat strikes, go-slows and other forms of worker protest have become more frequent. These have been triggered both by the shrinking of the state sector and by harsh working conditions in some private enterprises. The party wants its unions back in place in order to keep workers off the streets, which, it accepts, sometimes means restraining employers too. Giving government-controlled unions a little bit more muscle, the party feels, helps to deter desperate workers from trying to establish independent unions. The party still shudders at the recollection of Solidarity's growth in Poland in the 1980s. And more unions mean more money for the government. Unionised companies have to give 2% of payroll to their unions. Of this, 40% is meant to be forwarded to the ACFTU.

Official figures suggest the party is making headway. By the end of 2004 there were 55m union members in non-state-owned enterprises, 35% more than a year earlier and a more than fourfold increase compared with the late 1990s. In foreign-invested enterprises, progress has been particularly striking. About one-third now have unions, official reports say. In some areas with large concentrations of such firms, unionisation is even more widespread. Shanghai expects 60% of foreign-financed firms to have unions by the end of this year and 80% at the end of 2007. Neighbouring Zhejiang province, a big export-manufacturing base, says 70% of foreign firms there are already unionised. Two-thirds of Wal-Mart's supermarkets now have unions. In August the company's first two openly declared Communist Party cells were set up in the north-eastern city of Shenyang. Since unions are usually led by senior party members in a firm, it is likely there are others.

Some companies are worried. A new labour-contract law, which may be passed within the next year or so, contains provisions that critics (inside both foreign and Chinese enterprises) say could give unions a greater say in company decision-making. In a recent survey of its members by the European Union Chamber of Commerce in China, about half the consumer-goods companies questioned said they had negative or very negative views of the law as currently drafted. Revisions are expected.

However, there is little likelihood that trade unions in China will acquire the clout that some of their counterparts exercise in Western countries. For all its Marxist pretensions, the party is still more interested in business than in the grievances of the proletariat.

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Japan

Abe steps up

Sep 21st 2006 | TOKYO
From The Economist print edition

A new leader with an unknown agenda

AFP

Abe stoops and conquers

BY A distance, Shinzo Abe this week won the election for the presidency of Japan's ruling Liberal Democratic Party (LDP), the day before he turned 52. On September 26th parliament will appoint Mr Abe to the prime ministership, after Junichiro Koizumi's extraordinary five-and-a-half years. Beating Taro Aso, the foreign minister, and Sadakazu Tanigaki, the finance minister, he will be Japan's youngest leader since the second world war.

That in itself is a measure of the change wrought by Mr Koizumi: before him, LDP prime ministers were typically gerontocrats, gaining power through factional deals struck in smoky rooms. This time even party elders acknowledge the importance of showing a telegenic face to the public. Beyond that, however, much remains unclear about Mr Abe, his priorities and, indeed, the authority he can bring to office—though something of all these things will be gleaned from the shape of the government he announces next week.

Mr Abe sprang into the public eye four years ago, with an uncompromising stand over North Korea's admission that it had kidnapped Japanese citizens during the 1970s and 1980s. Just this week, as chief cabinet secretary, he announced a fresh round of financial sanctions against North Korea in response to its missile tests in July. Mr Abe, certainly, is an ardent nationalist, by Japan's standards. He wants Japan to play a more assertive role abroad, and to be prouder and less embarrassed about its past. He proposes that Japan's pacifist constitution be rewritten to allow the armed forces more easily to take part in overseas missions, and he wants legislation to make schools teach a history that is more suffused with patriotism.

These are contentious matters, which alarm those who see a bomb-thrower in Mr Abe. They are, however, just the kinds of issues to get tossed around in committees for years, drawing attention from Mr Abe's shorter-term intentions. For now, his chief discernible foreign intention looks rather hopeful: Mr Abe is responding to signals from a Chinese government desperate to improve bilateral relations that Mr Koizumi's visits to the Yasukuni shrine have undermined. He seems to want to resume the leader-to-leader summits that China suspended with Mr Koizumi.

As for domestic matters, his intentions are even more unclear. With the outcome of the leadership race pretty much certain for the past several months, Mr Abe felt no compulsion to describe his policies. He is

in favour of more growth, of a more efficient government and, no doubt, of water draining from Japanese baths counterclockwise. Mr Abe acknowledges the government's indebtedness, now equivalent to 170% of GDP. He has talked about the need to cut public spending on welfare, particularly medical bills. Yet he gives little hint as to whether he really wishes to slash government programmes, or to raise taxes. On the matter of increasing the consumption tax—an issue Mr Tanigaki fought on and which Mr Abe's allies say will be the most pressing domestic matter for the new government—barely a squeak.

Much hangs on his appointments next week. He may put experienced reformists in central positions, appoint practical, broadminded types as foreign-policy advisers, and strengthen the office of the prime minister (he favours the creation of an American-style National Security Council). If so, he will have sent a powerful message about how he intends to govern. If instead he panders to LDP interests or the ultra-nationalist wing, the Abe administration will have started dismally.

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Taiwan

An internal affair

Sep 21st 2006 | BEIJING
From The Economist print edition

Masses in Taiwan protest against the government

AP

"RED terror" on the streets of Taipei is how Taiwan's ruling party has, with predictable hyperbole, described days of protests aimed at toppling the island's president, Chen Shui-bian, because of alleged corruption. In Taiwan's politics insinuations of meddling by the mainland's Communist government are pervasive. But there is no sign of it this time. China, despite its contempt for Mr Chen and for democracy, would rather see the opposition Kuomintang (KMT) regain power through the ballot box.

Few expect Mr Chen to capitulate readily to the demands of the demonstrators, who are led by Shih Ming-teh, a former chairman of Mr Chen's own Democratic Progressive Party (DPP) and a long-time critic of the president. Since September 9th Mr Shih and fellow protesters, clad in red as a sign of anger, have camped in the city centre. On September 15th hundreds of thousands joined them in heavy rain for what the organisers described as a "siege" march from the presidential palace to the main railway station. They called for another protest near the presidential office on October 10th, the island's national day, close to where official celebrations are due to take place. But they have called off plans for protests in other cities, citing a risk of disorder (supporters and opponents of the president have already scuffled in the southern cities of Kaohsiung, Tainan and Pingtung). Plans for an island-wide strike have also been shelved.

Mr Chen's popularity has plummeted in recent months amid allegations of corruption involving senior aides, a son-in-law and the president's wife. In August the president himself was questioned by prosecutors over the use of false invoices to claim money from a fund available to him for pursuing clandestine diplomacy.

The KMT relishes the president's discomfort but is uncertain how to react. Even though KMT supporters have flocked to join Mr Shih, the party's chairman, Ma Ying-jeou (who is also mayor of Taipei), has been more diffident. Forcing Mr Chen to step down now would not necessarily help Mr Ma. The vice-president, Annette Lu, would then take over, and presidential polls would take place as originally scheduled in March 2008. The KMT is considering whether to mount a vote of no confidence against the DPP prime minister, Su Tseng-chang. With the KMT and its allies controlling a slim majority in parliament, this could succeed. But the KMT worries about possible in-fighting within its own ranks should this lead to a snap parliamentary election.

China would like the KMT to take back the presidency. But it fears that an embattled Mr Chen might try to shore up his popularity by pushing the island further towards formal independence from China. Mr Chen said last week that he was considering calling a referendum on whether to try to join the United Nations under the name Taiwan, instead of Republic of China, as the island still calls itself.

This would infuriate China. Its and Mr Ma's hopes lie in the various elections that are forthcoming: mayoral ones in Taipei and Kaohsiung at the end of this year, legislative polls in late 2007 and the presidential elections in 2008, when Mr Chen is constitutionally obliged to step down. The charismatic Mr Ma is a front-runner to succeed him. With Mr Chen and his party so politically damaged, it appears he has to do no more than wait.

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Kyrgyzstan

A dope dupe

Sep 21st 2006 | ALMATY
From The Economist print edition

Who planted heroin on a critic of the president?

POLITICAL rivalries in Kyrgyzstan are often personal and messy. Yet an attempt on September 6th to frame Omurbek Tekebaev, a former speaker of parliament and a critic of the country's president, on drug-smuggling charges struck a new low. Mr Tekebaev was detained at Warsaw's airport after a *matryoshka*—a wooden Russian doll—containing 595grams (1.3lb) of heroin was found in his luggage.

His arrest caused outrage among politicians in Kyrgyzstan, most of whom rallied loudly behind him. Two days later a Polish court determined that Mr Tekebaev had known nothing of the drugs he was carrying, and he was released. Now the hunt is on for his framer.

Members of parliament assembled to watch film shot by security cameras at Manas airport, in the capital Bishkek. It was later broadcast on television, and showed Mr Tekebaev's luggage being separated from that of his party, and then returned. The flames were fanned when an airport official claimed that he was instructed to arrange the set-up by Janysh Bakiev, a brother of President Kurmanbek Bakiev and deputy head of the national security services. He later recanted, which did not stop parliamentarians from calling on the president and his government to resign. The head of the security services offered his resignation, and both he and Mr Bakiev—though they maintained their innocence—were sacked by the president. Making matters murkier, Mr Tekebaev claimed that the tip-off to the Polish authorities had come from Kazakhstan's security services.

Last week President Bakiev at last made an appearance before parliament, with which he has long been at odds, and said there were no grounds for him to step down. He said judgment should await the report of various commissions convened to look into the scandal.

Whatever they find, it seems certain that someone rather powerful was behind it. It is also clear that President Bakiev and Mr Tekebaev are not on the best terms. Mr Tekebaev resigned his post as speaker of parliament in February, after refusing to apologise to the president for calling him a dog and suggesting he should “hang himself from the first tree.”

Mr Bakiev, who was swept to power last year by anti-government protests that became known as the “tulip revolution”, has been criticised for not reforming the constitution, as he had promised to do, and for failing to curb corruption and organised crime. Planting drugs on Mr Tekebaev may just have been someone's attempt to discredit one of his strongest critics.

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South-East Asia's refugees

A burden but also a boon

Sep 21st 2006 | MAE LA REFUGEE CAMP, THAILAND
From The Economist print edition

Thailand wonders what to do with the millions who have fled there

EPA

Any chance of a home?

Get article background

NESTLING on a hillside in the lush forests of northern Thailand, Mae La refugee camp's neatly thatched rows of bamboo huts make it look rather charming. While children frolic on the muddy streets, women sit at handlooms, weaving cloth for sarongs. The camp has fresh water from standpipes, a clinic and even some small shops. Aid-workers bring in food and medical supplies. Conditions are far better than in, say, the refugee camps of Darfur.

Yet Mae La is a prison for the 50,000 Burmese crammed into it. They are among the 163,000 or so stuck in camps along Thailand's western border. All have fled from war, repression and poverty in the neighbouring country they call Burma—but which the generals who brutally misrule it have renamed Myanmar. Though they are treated well in the camps, they are forbidden to leave. Those who sneak out seeking work risk being sent to Myanmar.

Most refugees at Mae La belong to the Karen ethnic group, whose homeland spans the border between Thailand and Myanmar. They have been arriving since 1984, when Myanmar's troops, drawn mainly from the country's dominant Burman ethnic group, first broke through the defences of the Karen's separatist army. Whereas the regime has beaten other rebellious minorities into signing “ceasefires”, the Karen fight on. Almost every dry season brings a fresh assault by the regime on their remaining turf, triggering a fresh flood of refugees. New arrivals are still trickling into the Thai camps following the latest such attack, earlier this year.

One fugitive Karen says she was a teenager when her family was among the first to arrive in Mae La, in 1984. Now a mother of five who works in the camp's clinic, she sees little prospect of going back. She would like to stay and work in Thailand. Others in the camp dream of being resettled in Australia, America or another rich country—an option now being opened up to them, following a change of policy by the Thai government. Resettlement is great for some, but it robs the refugee community of its most skilled and articulate members. There has been a heated debate at the camp over whether to accept Australia's offer to take some of its members.

Until this year the Thai authorities only allowed small numbers of refugees to be resettled in other

countries. They feared that large-scale resettlement would encourage even greater numbers to come across the border. This, after all, is what happened in the 1970s when America resettled many refugees who had come to Thailand to escape the Vietnam war.

Now resettlement is being granted to all those in the camps who can find a country to take them. America took its first batch, from the crowded Tham Hin camp, last month. Perhaps 10,000 more will go next year, as the resettlement schemes get into full swing, reckons the boss of a charity in the camps. But, with no end in sight to the Burmese regime's attacks on the Karen and other minorities, he says their places are likely to be taken by fresh arrivals. On September 15th America succeeded in getting Myanmar's troubles put on the agenda of the UN Security Council. But with China and Russia opposed even to discussing it, the chances of making the regime mend its ways are slim.

Those huddled in the refugee camps are only the visible tip of the iceberg. Far larger numbers of Burmese, and those fleeing poverty and oppression in Laos and Cambodia, live illegally all over Thailand. The government has wavered between sending them back and letting them stay. In 2004 it offered a temporary permit to any migrant from those countries who applied for it. Around 1.3m did so—but officials concede the true number of migrants in Thailand may be over 2m. About half of those registered in 2004 have failed to renew their permits.

Meanwhile Thailand's government briefly thought that a deal was possible with Myanmar's junta, in which the refugees and other migrants could be sent back under United Nations protection. The government and the UN High Commissioner for Refugees were well advanced on a sweeping repatriation plan when, in October 2004, the Burmese general they had been dealing with, Khin Nyunt, was deposed as prime minister by more hardline generals. This dashed hopes for any sort of deal with the regime.

Now Thailand's authorities accept that they are stuck with the migrant problem, admits Dusit Manapan, a senior official in the Thai foreign ministry. So, cautiously, they are edging towards long-term solutions. Those in the camps who are not resettled in rich countries will be offered identity cards, a first step towards letting them seek work. Meanwhile the government is hoping to persuade Thai manufacturers—such as shoemakers—to set up workshops in the camps. The education ministry wants to improve the limited schooling refugee children get, in particular teaching them to speak Thai. In the past year agreements have been reached with Myanmar, Cambodia and Laos to try to regularise the flow of migrants coming purely for economic reasons. Thailand will tell them how many guest workers it wants each year; the three neighbouring countries will then grant special passports to that number. It is unclear what difference this scheme will make.

Yet the Thai government's recent moves suggest at least that it realises that refugees and migrants can be a boon as well as a burden. As Thailand becomes more prosperous, it is getting harder to fill dirty, low-paid and risky jobs. Such work may be better than anything the visitors can find back home.

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Darfur

Will they be rescued?

Sep 21st 2006 | KHARTOUM AND WASHINGTON, DC
From The Economist print edition

Outsiders say that something must be done. Sudan says that it mustn't

AP

ON THE eve of the 61st United Nations General Assembly, 32 countries held events aimed at persuading their governments to recognise a responsibility to protect the civilians of Darfur, a threatened region in western Sudan. A rally in New York City's Central Park attracted upwards of 30,000 people who called for the speedy deployment of UN peacekeepers. The same day in Khartoum, Sudan's capital, a much smaller group of demonstrators, organised by the government, took the opposite tack. They marched to the UN's local headquarters to give warning that Security Council Resolution 1706, which had ordered 20,000-plus peacekeepers to Darfur, threatened the stability of their country.

At the UN itself, on September 19th, Sudan's president, Omar al-Bashir, agreed that the 7,000-strong contingent of African Union (AU) peacekeepers could stay, but insisted that he would not accept a UN force designed to place “Sudan under mandate, a sort of trusteeship”. The mandate of the AU force has been extended until the end of the year and the Security Council is now trying to find ways to make it less feeble.

But pressure on Sudan is rising. George Bush, in his speech to the UN the same day, repeated his government's view that the atrocities in Darfur amounted to genocide against its black African population. If the Sudanese government continues to block the deployment of UN peacekeepers, he proclaimed, “the United Nations must act”. He did not specify how.

At the same time, Mr Bush announced that a new special envoy, Andrew Natsios, would be going to Sudan to help broker peace. Mr Natsios is a heavyweight, a former head of USAID, who knows Sudan well. He led America's humanitarian mission in Darfur, a task that requires both energy and diplomatic skill. His appointment was welcomed. But Sudan's government and its militia proxies will not stop terrorising Darfur unless they fully understand that serious consequences will follow, argues John Prendergast of the International Crisis Group, a think-tank. In other words, Mr Natsios will be effective only if Mr Bush lets him sharpen his diplomacy with credible threats.

Is Darfur one of the administration's top priorities? Probably not. Mr Natsios fills a post that was left

vacant for three months, after Robert Zoellick, the American envoy who helped to negotiate a partial peace deal in May, left for a job on Wall Street. And though the Security Council has authorised sanctions against Sudan, including an oil embargo and a no-fly zone over Darfur, no country has made a serious effort to implement such measures.

Yet Mr Bush is under pressure, from Christian Republicans among others, to do something. Darfur's civilian population is at risk as the fighting intensifies between the government and the rebel alliance that refused to sign the May peace deal. Without a much more robust peacekeeping force, the 2.5m displaced people crammed into camps remain in acute danger, with aid agencies unable to look after them.

Sudan's government argues predictably that the West is again trying to impose its will in Africa. It goes on to threaten that any forcible deployment of peacekeepers could lead to out-and-out war. In Khartoum, the stand-off is seen as a critical political moment. Analysts of all stripes in the capital worry that if a face-saving solution to the conflict is not found, the winners may be the fundamentalists—who are far more radical and anti-West than the government now in power.

The stakes are high. Nobody wants to jeopardise the peace agreement for Southern Sudan signed last year (ending two decades of civil war), which entails the participation of outsiders and the UN. Sudan might end its co-operation in intelligence-gathering in the “war on terror”. Pro-Westernisers in the government would be marginalised. Feelings in Khartoum are so tense that even in anti-government circles there are fears that, if things go wrong, Sudan could be lost to the West for years.

In Darfur, the regime has carried out appalling crimes. Its *janjaweed* proxies have killed farmers wholesale; its aircraft destroyed whole villages. This grim record makes it near-impossible for outsiders to take seriously Sudan's claims that it is trying to minimise the violence. Yet it still needs to be understood why the country's ruling National Congress Party is so reluctant to accept a UN force, and why Arab-Sudanese are so apprehensive.

Partly, it is a simple matter of bristling at the perceived loss of sovereignty. America's policy in the Middle East is distrusted in Sudan as it is elsewhere in the region; some Sudanese even present the arrival of UN troops as a power grab rather than an effort to avert a humanitarian catastrophe in the refugee camps. Beyond that, the Sudanese have festering grievances of their own towards the West, the United States in particular. Above all, Sudan resents the fact that it has not been rewarded for its recent steps towards modernisation.

Even though the country no longer receives World Bank assistance, by implementing the bank's suggestions Sudan has become one of its rare successes in Africa. A “Commission for the Protection of Non-Muslims in Khartoum” is working on the radical liberalisation of laws in the capital. The regime would like to see its co-operation with the CIA recognised and its name removed from the State Department's list of states that sponsor terrorism. And all Sudanese would of course like to see Congress lift its trade embargo.

The war in Darfur is more multi-faceted than has generally been reported. Arab tribes, which comprise about a quarter of Darfur's population, fear that they will be lumped together with the murderous *janjaweed* militia, even though only a small proportion of the region's 1m or so Arabs joined the organisation. These days, Darfur's Arabs are afraid to travel—and too frightened to live in the densely populated refugee camps. Most of these nomads and farmers have sat out the war in the bush, cut off and not on aid agencies' radar.

They worry that one of the first task of any UN deployment would be to disarm not just the *janjaweed* but them too, a move that they say would spell an end to their wandering way of life: the war has so poisoned inter-ethnic relations that no nomad would dare travel unarmed. Recently leaders of several dozen of these clans discussed defending themselves, not against the rebels but against the UN.

Islamists on the rise

How great a danger is the Islamist threat? The Sudanese brand of Islam may not be as violent as in other parts of the Middle East, but since the government rules with such an iron fist, it is hard to measure the strength or extremism of its domestic radicals. One bell-wether of the national political mood could be the student elections at the University of Khartoum. For the past three years, the winner has been an oddball “Democratic Alliance” coalition. But a fundamentalist Muslim party has been polling a strong second. An “invasion” by the UN could embolden the fundamentalists—and a government forced

to accept intervention against its will might be slow to restrain its radicals.

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Yemen

Leave your guns at home, and vote

Sep 21st 2006 | SANAA
From The Economist print edition

The big surprise is that this was a real live election

RULING Yemen is like trying to dance on the head of a snake, says a Yemeni proverb. But for the past three decades a capable charmer has been in charge. Since seizing power in 1978, President Ali Abdullah Saleh has held this unruly and impoverished, but scenically spectacular corner of Arabia together, coaxing and cajoling its bewildering variety of tribes, parties and religious factions into submission, and cementing his position with strategic dollops of nepotism. The result is a state that, while sharing characteristics with other strongman regimes in the Arab world, sustains a cheering degree of pluralism.

But Mr Saleh's power to charm is being tested as never before. Last winter, a wave of popular acclaim, carefully staged by the governing General People's Congress (GPC), "forced" the president to go back on a promise not to run in the elections set for September 20th. Naturally, most Yemenis concluded that the polls would replicate previous exercises, such as the festive occasion in 1999 when Mr Saleh ran against a hand-picked challenger (who declared that he himself would vote for the president), and secured a 96.3% majority.

Reuters

But did she vote for the snake charmer?

But to the surprise of nearly everyone, five opposition parties, ranging across the ideological spectrum from Islamist to socialist, suddenly stopped quarrelling and agreed this summer to unite behind a single candidate. Their Joint Meeting of Parties (JMP) has mounted a vigorous campaign, capitalising on widespread disgruntlement over such issues as corruption, inflation, and perceived favouritism towards Mr Saleh's own clan, tribe and cronies. This last complaint is voiced loudest in the thinly populated but oil-rich south, which was an independent, Soviet-model socialist republic before uniting with the north in 1990.

Although the JMP's candidate, Faisal bin Shamlan, is a liberal-leaning southerner, the bulk of its strength comes from the Islah or Reform Party. Ideologically close to the Muslim Brotherhood, with a highly motivated support network led by a northern clan from the same tribe as Mr Saleh, Islah used to be allied to the president. Its shift into opposition, combined with other developments, such as a two-year uprising in the far north and urban riots last year sparked by fuel price rises, have rattled Mr Saleh as never before.

Still, few Yemenis expected him to lose, and at mid-week he was heading for a resounding victory. This reflects not only Mr Saleh's lingering personal popularity, and the weight of a patronage system that extends beyond the large bureaucracy and army to tribal leaders and favoured businessmen, but also the widespread fear that the country is simply too fragile to cope with a transfer of power.

In the lead-up to voting, the GPC pulled no punches. Roping in finance from patronage-seeking businesses, it plastered millions of posters across the country that declared the president, among other things, a Man of Tolerance and Dialogue, the Achiever of National Miracles, and the Knight of the Arabs. A whispering campaign hinted that Mr bin Shamlan was a Trojan Horse for an Islamist coup, or for southern secessionism. One ultra-conservative sheikh appeared on state television, declaring that to vote against the president was forbidden in Islam.

The opposition's response was hardly less fierce. Opposition newspapers and websites detailed corrupt dealings, such as the smuggling out of the country of imported, subsidised diesel fuel and the purchase

of suspiciously costly Russian jet fighters. In some districts JMP rallies drew more people than the president's. “We want a president for the Yemenis instead of Yemenis for the president,” declared Mr bin Shamlan repeatedly, “We don't want a change of personnel, but a change from personal rule to the rule of institutions.”

The potential for violence is never far from the surface in a country whose 20m citizens are estimated to own some 60m firearms. Hoping to pre-empt trouble, state television mounted a campaign promoting peaceful voting, and the army deployed in force near polling stations. On voting day, megaphones reminded citizens that guns, commonly carried in rural regions, were to be left at home.

As if to emphasise the danger, the week before voting was marred by two near-simultaneous terrorist attacks against important oil installations. Luckily, the four suicide bombers, assumed to be linked to al-Qaeda, blew themselves up when confronted by security officers. The police announced the pre-emptive arrest of four other suspected terrorists. These successes form part of a trend that has seen a general waning of the influence that al-Qaeda and its offshoots have in a country that, until five years ago, housed more than a dozen *jihadist* training camps.

The continuing saga of four French tourists, captured by tribesmen and held hostage for the past three weeks in a bid to extract concessions from the government, might seem to mar the generally improving security picture. But such snatches are a form of traditional tribal bargaining, and tend to end peacefully.

Obviously, such antics do little to promote investment. It is desperately needed. The World Bank estimates that 42% of Yemenis live below the poverty line. Economic growth in recent years has not matched population growth, which still runs at more than 3% a year. Oil exports, which now produce 70% of state revenue, are set to decline as reserves dwindle, with some experts predicting they may run out as soon as 2012.

Given such burdens, it is not surprising that so many Yemenis wearily admit that Mr Saleh may be a necessary evil. One political consultant, who said he expected massive cheating at the polls, as well as some violence, says that the voting still marks a step forward, since the strengthened opposition will inevitably help curb abuses of executive power. “Casting a stone into this stagnant water is better than nothing,” he said before the polls. “People will feel they have the power to change the government, and the president will realise that it is no longer business as usual.”

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Iraq

Slaughter in Baghdad

Sep 21st 2006 | DUBAI
From The Economist print edition

A prime minister dependent on Shia radicals hesitates to control them

AMERICA'S military spokesman in Iraq claimed last month that new military deployments in Baghdad over the summer had succeeded in cutting the capital's grisly murder rate nearly in half. Ever since, as if to rebuke this claim, bodies have been turning up, by the roadside or near the Tigris river, at a rate that is high even by Iraqi standards, with 165 discovered in one four-day period last week.

AFP

Horrors in the morgue

The dead are presumed to be the victims of sectarian death squads, most of which are linked to Shia militia groups, such as the Mahdi Army, but some to the Sunni insurgents. The victims are abducted from their homes or snatched at improvised checkpoints and frequently tortured (electric drills are supposed to be a trademark of the Shia groups). Sometimes a ransom is demanded but more often these days the kidnapped are murdered, either as part of a tit-for-tat cycle of vengeance or to drive away members of the other sect from contested areas.

At recent press conferences, the Americans have stuck to their story: that they have witnessed a marked downturn in killings in the districts of Baghdad where their efforts have been concentrated, such as the Dura in the south or Ameriya in the west. They have declined to provide specific figures to bolster their claims, nor can they explain how their estimates can be reconciled with the numbers coming from Iraq's health ministry, which claimed that 1,500 such bodies went through the Baghdad morgue in August, virtually the same number as in July.

It could be that the Iraqi figures are inaccurate: the health ministry is run by politicians associated with the Mahdi Army, and may believe that inflating the figures is a way to get the Americans out of the country. It could also be that the death squads are lying low where the Americans are operating, but stepping up their operations in other areas. It could also be that no one knows how many people are being killed.

In any case, the continuing slaughter coincides with a growing sense among Americans and others in Baghdad that Nuri al-Maliki's government lacks the political will to take the steps to stop it. Mr Maliki took office in May with the understanding that he would take action against the Shia militias, believed to be responsible for most of the killings in Baghdad.

It was assumed that he would oust their sympathisers from the police force, as well as sending troops to

strike at military commanders and their retinues directly implicated in the killings. Mr Maliki's interior minister, Jawad al-Bolani, is said to have sacked or transferred a number of officers but lacks the political clout for a full-scale cleansing of the police. And though there have been some raids on strongholds of the Mahdi Army, where arms or hostages are believed to be held, other possible targets are protected, including most mosques as well as the health ministry, which is said by some to serve as a giant militia base. Most of the Mahdi Army's main support base in the vast slum of Sadr City is off-limits for raids.

Political cowardice or political calculation? Presumably, Mr Maliki does not want to push the Mahdi Army's young leader, Muqtada al-Sadr, into a corner. Mr Sadr's followers make up the larger portion of Mr Maliki's Shia-dominated parliamentary block, and are far stronger than the prime minister's own Dawa party. They are also fully capable of staging an insurrection that would make Iraq ungovernable. As things are, Mr Sadr, who has always publicly espoused Sunni-Shia unity and who struggles to maintain control of his loose-limbed movement, may be willing to turn a blind eye to renegade Mahdi Army leaders being picked off.

At the United Nations this week, George Bush declared that “the United States of America stands with [Iraq], so long as the government continues to make the tough choices necessary for peace to prevail.” He did not say what the Americans would do if Mr Maliki's government refused to make those tough choices.

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Zimbabwe

No democracy, no bread and butter

Sep 21st 2006 | JOHANNESBURG
From The Economist print edition

Discontent is bitter but there's not the unity to harness it

THE protest was stamped upon before it could even begin. Last week, members of the Zimbabwean Congress of Trade Unions tried to organise marches in the main towns. They had a lot to protest about. Food, fuel and other essentials are in painfully short supply (shops in Harare, the capital, are even running out of bread). Power cuts are routine, three-quarters of the population have no job, inflation is at 1,200%—the highest rate on the planet. The economy shrank by nearly half in the six years to 2005, and most people now rely on remittances from some of the 3m-4m Zimbabweans living abroad.

Some union leaders were arrested as they gathered for the march and others were chased off by the riot police. Officials claimed that the trade unions were pursuing a political agenda. But the would-be marchers wanted to complain about the lack of bread and butter, rather than the flattening of democracy. The unions want a higher minimum wage, AIDS treatment for the poor, lower taxes, and for officials to stop harassing informal traders.

The poverty line—what is reckoned to be the bare minimum to keep a family of six alive for a month—stands at Z$96,000 ($384 officially, much less by black-market rates). But the unions say that the average monthly salary is less than a quarter of that, barely enough to pay for a decent pair of shoes. One adult in five may be infected with HIV, and AIDS is thought to kill nearly 500 people every day. Drugs could have saved many of them, but there is almost no money for that. People with jobs see 5% of their salaries deducted, supposedly to finance a national AIDS programme. Yet getting treated in government clinics is difficult, and patients must pay Z$3,000 for a monthly course of pills. Private treatment is much more costly.

In the past, many Zimbabweans made ends meet by trading informally: women offered small piles of tomatoes or jars of honey from the roadside; men sold flecks of gold scraped from river-beds; hawkers packed the streets of Harare. But the government's urban demolition drive last year destroyed the homes and businesses of some 700,000 people. Traders are now told to use government stalls, but few have been built and only members of President Robert Mugabe's party get places. Those trying to sell wares outside official markets are arrested and their products grabbed.

There is no resolution in sight. Clearing up the economy depends on sorting out the politics, and that depends on Mr Mugabe leaving office. He shows absolutely no sign of doing so. The police, the army and the ruling party are growing stronger, at the expense of such state institutions as parliament and the courts. Some observers believe that the situation is so bad it could become explosive.

So it could, but continued years of quiet desperation seem more likely. The opposition—the Movement for Democratic Change (MDC), the unions, the churches and civic groups—have failed to unite in putting as much pressure on the government as possible. They did get together in a “Save Zimbabwe” convention in July, promising mass resistance, but nothing came of it. Though other groups backed the unions' planned march, they made it clear it was not a joint action. The MDC, itself split, said it would watch with “keen interest” how the authorities reacted. Morgan Tsvangirai, the party's founder, has been saying since March that mass action is in the works, predicting a “winter of discontent”. But Zimbabwe's winter has passed, with much discontent, and little action.

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South Africa

The comeback kid

Sep 21st 2006
From The Economist print edition

A prosecution case against a popular politician surprisingly falls apart

Get article background

THE political scene is suddenly less dull. On September 20th a case against South Africa's former deputy president, Jacob Zuma, who had been facing trial for corruption, was dramatically thrown out of court even before it properly began. State prosecutors, who had been hoping to show that Mr Zuma took bribes from a French arms firm, proved to be unable even to complete their indictment.

Hundreds of Mr Zuma's carefully choreographed supporters, who had gathered at the provincial court building in Pietermaritzburg to follow the case, broke into cheers. Some in traditional Zulu dress began chanting "My president!" The populist Mr Zuma has made no secret of the fact he would like to take over as South Africa's leader when Thabo Mbeki, the current president, steps down in 2009.

AP

Here I come

His prospects for getting the top job have certainly improved after this week's court decision, although it will be a long road from here. There is a slender chance that the prosecution will try to get him back into court. But that may prove politically unacceptable. Already some suspect a vendetta against Mr Zuma. He was sacked as deputy president last year after a close financial adviser was convicted of fraud. This year he was tried for rape after an HIV-positive woman, a family friend, said he had assaulted her. Mr Zuma was cleared of those charges, but only after some embarrassing personal details were exposed in court.

A deft political performer, Mr Zuma has been building an alliance of left-of-centre supporters who feel that Mr Mbeki's fiscally cautious government is doing too little for the poor. Some powerful trade-union bosses, youth leaders and activists in the ruling African National Congress (ANC), plus many in the heavily populated Zulu-dominated eastern part of the country, have already thrown their support behind his campaign. He has also used his various court appearances to make speeches, raise funds and to organise supporters to take to the streets.

Ultimately, Mr Zuma may not prove strong enough to force the ANC to pick him as leader. Too many members are dismayed by comments he made about women, and his admission that he considers "taking a shower" to be a safe means to prevent HIV transmission after sex. Others recall that the judge who found his associate guilty of fraud last year also concluded that a "generally corrupt" relationship existed between the two men. But, for now, Mr Zuma is jubilantly on the comeback trail.

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Correction: Burundi

Sep 21st 2006

Because of a mistake by the picture agency, we wrongly captioned a photograph of Pierre Nkurunziza and Agathon Rwasa in our article on Burundi last week. Our apologies to both. This error has been corrected online.

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The pope and Islam

When the heavens open

Sep 21st 2006 | ROME
From The Economist print edition

AP

An ill-judged quotation about Islam has obscured a more serious message

Get article background

HE HAD to wait six centuries, but Emperor Manuel II Palaeologus has his revenge. Manuel, who ruled the Byzantine empire in 1391-1425, ended his days after signing a humiliating peace with the Ottoman Turks, the rising Muslim power of his day, who within three decades of his death would destroy the empire entirely.

In a university lecture at Regensburg on September 12th, Pope Benedict XVI conjured up the memory of the emperor by recalling his views on Islam. Citing a hitherto obscure 14th-century text, the pope quoted Manuel as saying: “Show me just what Muhammad brought that was new, and there you will find things only evil and inhuman, such as his command to spread by the sword the faith he preached.”

The theme of the pope's lecture was a favourite one: the link between faith and reason which, he said, implied a rejection of any link between religion and violence. The pope later insisted the whole point of his address was to appeal for a dialogue with Islam. But many Muslims concluded that this was a pretty odd way to go about it, and demands for an apology soon poured in. For a few tense days, it looked as if the affair could spiral out of control, rather as happened earlier this year after a Danish newspaper had published cartoons lampooning Muhammad, when more than 100 people died in violent protests round the world.

The breadth of the front against the pope was remarkable. Fundamentalist fanatics were there, raving about conquering Rome and putting Christians to the sword. But so too were representatives of some of the more moderate governments in the Muslim world, including those of Morocco, Turkey and Malaysia. By mid-week, however, a swift response from the Vatican seemed to have contained, if not neutralised, the controversy. In a statement issued first on his behalf and then twice in person, the pontiff expressed deep regret for the offence that had been taken. He vigorously denied sharing Manuel's view of Islam.

In Somalia an Italian nun was shot dead. But it was unclear if her murder was a reprisal for the pope's remarks. The pontiff's critics grumbled that he had not really apologised. But his protestations

nevertheless represented an unusual degree of expiation by a pope, whose views on some issues can be proclaimed infallible.

The European Commission's spokesman made the obvious point: that Pope Benedict should be free to say what he wants. But freedom is one thing, advisability quite another. The dust may be settling on this dispute more quickly than it might have done. But there are reasons to fear that the damage it has done could turn out to be enduring.

Until now the Vatican has been remarkably successful in ensuring that, even if some sort of “clash of civilisations” is in progress, it need not turn into a clash of religions. Benedict's predecessor, John Paul II, understood that what radical Muslims most resent about the West is not its Christianity, but its rampant secularism. Osama bin Laden may have blustered that the American-led invasions of Afghanistan and Iraq were a new “crusade”. But, although George Bush at one point played into his hands by carelessly using that very word, the view that Muslims were victims of a new holy war was impossible to sustain so long as the most influential Christian leader was openly critical of the fighting. By opposing both the bombing of Afghanistan and the invasion of Iraq, Pope John Paul made sure that the world's biggest Christian faith was not linked in Muslim minds with its only superpower.

Pope Benedict's ill-judged quotation now risks blurring, if not erasing, that carefully-constructed distinction. Ayatollah Ali Khamenei, Iran's supreme leader, whose opinions carry some weight among the world's 230m Shia Muslims, pounced on the pope's remarks. He claimed they were just the latest development in the “crusade against Islam” launched by Mr Bush.

Such an allegation will, unfortunately, seem all too credible to many Muslims, because of the pope's record. On the one hand he is a keen proponent of the view that Europe's identity is essentially Christian. In 2004, while he was still a cardinal, he declared that Turkey should not be admitted to the European Union. On the other, since becoming pope, he has repeatedly signalled a rejection of the unconditional dialogue favoured by his predecessor. In particular, he has packed the previous pontiff's top expert on Islam off to Cairo and merged the Vatican's department for inter-religious dialogue into its “ministry” of culture.

Yet it has also become clear that Islam is near the top of Pope Benedict's agenda. He is planning a visit to Turkey in November. On the very day that the latest crisis erupted, he confirmed as his new “foreign minister” a Moroccan-born archbishop, Dominique Mamberti, who has spent most of his diplomatic career in Muslim-ruled countries.

When compared with John Paul II, the difference is not that Benedict, who was once a professor at a German university, rejects any discussions with Muslims. It is rather that he seeks to fill them with meaty, challenging substance. This is what he meant when, after lamenting the reaction to his words on September 17th, he added that he wanted a dialogue that was “frank and sincere”.

There are two points he is especially keen to make. One is that Christians in many Muslim countries do not have the same religious freedom that is enjoyed by most Muslims in the West. The other is that too many Islamic clerics seem to sanction or at least tolerate violence in the name of religion. This was central to his Regensburg lecture in which, as he later said, “I wished to explain that not religion and violence, but religion and reason go together.”

The value of that point in the present state of the world can hardly be overstated. It is sad that it should have been put in such an inept way that the only answers came in the form of burnt effigies, grisly threats—and a great deal of sincerely outraged protest.

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Sweden's election

Reinfeldt explained

Sep 21st 2006 | STOCKHOLM
From The Economist print edition

Out with the Social Democrats, in with the Moderates

Reuters

THE voters' decision to kick out Sweden's Social Democrats on September 17th was predicted by most opinion polls. Yet given how long they have been in power, it was still a bit of a shock. That Fredrik Reinfeldt, the young, charismatic leader of the four-party centre-right alliance managed to win was testimony to the cleverness of his strategy. He pushed the opposition to the centre while promising voters change—but not too much.

Mr Reinfeldt plans to make it simpler to create jobs, to prune taxes and trim welfare benefits a bit, and to sell state stakes in a clutch of big Swedish companies. Other than that, it will be business as usual for Sweden's fabled model. Mr Reinfeldt may have long-term hopes to bring Sweden into NATO and the euro, but his immediate agenda is topped by the mundane matter of employment, not foreign policy.

The election was closely fought and dirty, with plenty of mud-slinging on both sides. The centre-right ended up with 48.1% of the vote; the Social Democrats and their allies got 46.2%. It is a slim lead but one that gives the new government a seven-seat advantage in parliament. That will also give Sweden its first majority government in 25 years.

The losing Social Democrats entered the election race with several strong cards. The economy was in fine fettle, with annual GDP growth of 5.6% in the second quarter and both inflation and unemployment low (at least officially—Sweden has high disguised unemployment, and this became a big election issue). Having been in power for the past 12 years (and for most of the past century), the Social Democrats also had a privileged position as natural rulers of the country. Yet this presumption to rule may have proved their undoing.

Goran Persson, the Social Democrats' rumbustious leader, had become increasingly domineering during his decade in office. There was no crown prince to lead the party after him, and a growing public perception that he was arrogant and bullying. His challenger, Mr Reinfeldt, had relative youth on his side (41 to Mr Persson's 57), an affable demeanour and a canny ability to hear and understand voters' concerns. “The role of personality was very significant in this election, and Mr Persson was a negative factor for the Social Democrats,” says Karl Magnus Johansson, a political scientist in Stockholm.

Also unusual in this election was the united stance of the four centre-right parties, which campaigned under the same banner. Notorious for internecine squabbling in the past, this time round they ironed out their differences in advance and offered voters a complete package. Such unprecedented unity appears genuine. “It was teamwork that won this election,” Mr Reinfeldt told his supporters. All four alliance

leaders cited approvingly the “chemistry” between them.

This may bode well for the durability of the new administration. The most recent centre-right government, which was briefly in office under Carl Bildt in the early 1990s, was blighted by a deep recession, followed by a huge row over whether to build the Oresund bridge to Denmark. In the early 1980s a centre-right coalition had crumbled over tax reform. An earlier coalition in the 1970s was blown apart by a nuclear-power squabble.

The alliance's self-portrayal as a cohesive entity contrasted sharply with a new air of uncertainty on the left. The Social Democrats refused to offer a formal coalition or a joint programme with other left-wing parties. The centre-right's new glue, by contrast, is so strong that some voters foresee it enduring. “We'll see this coalition lasting for a long time, the parties might even merge into one in the future,” says Sven Eriksson, who owns a delicatessen in central Stockholm.

Mr Reinfeldt's most pressing priority is to choose his cabinet. Ahead of polling day, the only earmarked job was his own. Carving up the rest of the spoils will be linked to the share of the votes each alliance party won. Although Mr Reinfeldt's Moderate Party captured more votes than his three partners combined, he might not demand such a mathematically exact share of cabinet seats. On the other hand, the Moderates' electoral success gives him a strong case for taking the meatier portfolios, such as finance and foreign affairs. Several candidates are being bandied around by the media, but Mr Reinfeldt says he will not name names until the first week of October. All that he has said so far is that it is his intention to fill the jobs with the best-qualified people, and that this principle should outweigh a suggested 50:50 split between the sexes.

Even so, as a Swede raised on the notion of equality, Mr Reinfeldt will be keen to include a fair number of women in his cabinet. Gunilla Carlsson, the Moderate Party's deputy chairman and a former member of the European Parliament, is a possibility for the foreign ministry. But Lars Leijonborg, whose Liberal Party took a bashing at the polls over a spying scandal late in the campaign, might welcome a change of scene, and the prestige of the foreign job, to crown his political career. The Centre Party leader, Maud Olofsson, is tipped for industry and trade. Goran Hagglund, leader of the Christian Democrats, may yet get the finance portfolio. Anders Borg, the Moderates' chief economist and the architect of Mr Reinfeldt's ascent, is another possibility for finance.

Mr Reinfeldt is a largely unknown quantity outside Sweden. Even at home little was known of his personality or career details until this campaign. A recent biography by a veteran television reporter, Ulf Kristofferson, did much to enlighten Swedes. Mr Reinfeldt's commitment to hard work and his fascination with politics are deep-seated. He earned his first pay check as a three-year-old clothing model; later he paid his way through university by working as a night-watchman. At school, he was admired for sending up politicians in piercing satirical revues.

Mr Reinfeldt's latest role, as prime minister, seems well cast. His claims to be leader of a new “workers' party” are clearly heartfelt. His determination to plough a clean furrow between socialism and capitalism has the ring of truth. Yet some observers still question the sincerity of his makeover. He professes devotion to the principles of the welfare state, but he wrote a stinging criticism of the Nordic model in his youth. In “The Sleeping People”, a book he published in 1993, he said that Swedes were “mentally handicapped and indoctrinated to believe that politicians can create and guarantee welfare”. Mr Reinfeldt has, of course, since decried such immoderate views. But if he fails to deliver his election promises, they may come back to haunt him.

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Berlin

Poor but sexy

Sep 21st 2006 | BERLIN
From The Economist print edition

A fashionable Social Democratic fief needs a stronger economic revival

DOES politics matter in a city with unemployment of over 17% and a debt of €63 billion ($80 billion)? Klaus Wowereit, Berlin's Social Democratic mayor, jibs at the question. Naturally, he says, politics is not just about spending money—witness his pay cuts for civil servants. Now he has five more years in which to prove his point. In Germany's state elections on September 17th the Christian Democrats did badly, and the Social Democrats lost ground in Mecklenburg-West Pomerania (where the neo-Nazi National Democratic Party, or NPD, won a few seats in the state parliament). But Mr Wowereit did well in Berlin. He may now swap his coalition partner, the Left Party, for the Greens.

His big task is to help Berlin avoid the 1990s fate of Washington, DC: of being a bankrupt city with a rich political ghetto. After unification in 1990 Berliners hoped to regain their role of industrial hub and gateway to central Europe. Instead, the city lost two-thirds of its jobs in manufacturing, which now employs fewer than 100,000 in a population of 3.4m. Berlin resembles a glitzy shopping mall with lots of smart boutiques but no anchor tenant.

One reason is that “West Berlin was almost as socialist as East Berlin”, says Eric Schweitzer of the local chamber of commerce. During the cold war both halves of the city were heavily subsidised, but the money dried up after unification. The legacy was one of uncompetitive firms, a huge bureaucracy and an ingrained welfare mentality. Heavyweight firms that moved out after 1945, such as Siemens and Deutsche Bank, saw no reason to return. The results are visible as soon as one strays beyond the smart government district around the Brandenburg Gate or the posh neighbourhoods near Kurfürstendamm. Signs of poverty are everywhere. One-third of children in Berlin are poor.

Yet a new economy is gradually emerging. Hip Prenzlauer Berg is now home to a bevy of small fashion designers. The banks of the River Spree have become the base for Universal Music, MTV and other media firms. Farther south is Adlershof, a sprawling technology park. “Faster than any other large city in the world, Berlin needed to develop a new economic profile—and it is happening,” says Kurt Geppert of the German Institute for Economic Research, or DIW. Jobs in software, media and advertising are growing fast. Berlin now has a mix of technology, talent and tolerance that attracts skilled people and breeds growth. Spending on R&D is above average, thanks largely to the city's three universities, which also lure foreigners, artists, musicians and others.

Indeed, Berlin is now Europe's liveliest city after sunset. Since the glamour of the football World Cup final in July, barely a week has passed without a big event. Twenty-somethings jet in on low-cost airlines for the all-night club scene. There is a relaxed openness not found in straiter-laced European capitals. “It does not take much convincing to get good programmers to relocate here,” notes Ludwig von Reiche, a software manager who is chairman of the Berlin branch of the American Chamber of Commerce. Rents are cheap: a renovated four-bedroomed flat costs as much as a claustrophobic London studio.

All of which may make one wonder why Berlin is not booming already. One reason is a lack of entrepreneurial spirit, says Klaus Brake of the Berlin-based Centre for Metropolitan Studies. Almost half of Berliners live on benefits. Mechanisms for turning an idea into a product are underdeveloped; there is no private venture capital, and most firms are conservative. Despite Mr Wowereit's cuts, Berlin is still far from being an efficient state. The city has yet to sell its public-housing agencies. It boasts of offering a one-stop service for investors, but local municipalities have plenty of red tape of their own.

At the top, too, there is room for improvement. Mr Wowereit, who is openly gay, is a good face for Berlin; he calls it “poor but sexy”. But “Wowi”, as he is known, is a political operator, not a visionary. Berlin does not always do its best to attract skilled staff. Many foreign teachers, for instance, are denied

equal pay, since their credentials are not accepted as of equal worth; this makes it far harder for bilingual schools to retain staff.

The challenge for Mr Wowereit is to balance the interests of Berlin's new elite with those of ordinary folk. It will not get any easier, since even Berlin's creative industries are unlikely to create enough jobs for the out-of-work. Despite Mr Wowereit's win, the election in Berlin was also a warning. Turnout hit a low of 58%, and as many as 13.7% voted for splinter parties (including a chunk for the NPD). Even in the capital, it seems, politics still matters.

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Britain, Spain and Gibraltar

Between a rock and a hard place

Sep 21st 2006 | MADRID
From The Economist print edition

A trilateral deal over a disputed patch of territory

SPAIN'S foreign minister, Miguel Ángel Moratinos, likes to point out to his British visitors the large 18th-century oil painting that hangs behind his desk. The picture is of Gibraltar, a tiny British overseas territory whose 30,000 inhabitants obstinately refuse, despite Spain's claim of sovereignty, to become Spaniards.

Given Mr Moratinos's taste in pictures, it must have cost him an effort to smile on September 18th, when he posed in Córdoba for a three-way handshake with Gibraltar's elected chief minister, Peter Caruana, and Britain's Europe minister, Geoff Hoon. Yet the handshake represented an historic shift in Spain's attitude to Gibraltar. For it marks the moment when sticks are replaced by carrots.

The deal resolves many arguments over Gibraltar, but leaves the question of sovereignty on one side. Gibraltar's airport will get a new terminal straddling the frontier and there will be direct flights from Spanish cities and, vitally for such a poor region, for tourists from all round Europe. A row over British pension payments to 6,000 Spaniards who lost their jobs at Gibraltar's Royal Navy dockyards when Franco closed the border in 1969 has been settled. Gibraltar will get direct dialling. Spanish controls at the border, fully re-opened in 1985, will be eased. And an outpost of Spain's Cervantes Institute will open—letting the Spanish flag fly in Gibraltar for the first time in half a century.

“The Spanish government's political courage has been key,” commented Mr Caruana. This was a sign that carrot diplomacy may be working. The stick wielded by previous governments had signally failed to advance Spain's quest to regain the sovereignty it ceded in the Treaty of Utrecht in 1713. Instead it set generations of Gibraltarians firmly against Spain. Asked in a 2002 referendum if they would contemplate co-sovereignty, 98.97% of Gibraltarians said no. Britain, which is happy to share, has pledged not to concede anything on sovereignty against local wishes.

Spain, which has had problems over self-determination for its own regions, has always refused to accept that Gibraltarians can decide their future. Previous governments would not have shaken hands with them over anything. Spain's centre-right opposition will chide the Socialist government, although the new approach should improve relations with Britain, a European Union partner. The British might have looked better had they sent the foreign secretary, Margaret Beckett, in place of a more junior minister. But Mr Hoon must be getting used to deputising: Mrs Beckett has skipped all of the three most recent meetings of EU foreign ministers.

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Cyrillic

Letter writing

Sep 21st 2006 | SOFIA
From The Economist print edition

Of orthography and politics

IF BULGARIA joins the European Union in three months' time, which the European Commission will recommend next week, it will mark a rare turn in the 15-year retreat of the Cyrillic alphabet. For Bulgarian will then become an official EU language—and it will bring with it the script named after St Cyril, a ninth-century Byzantine monk.

Cyrillic has been in retreat ever since it was dumped, along with Soviet rule, first by Moldova, and then by Azerbaijan. Tatarstan, a Turkic republic in the middle of Russia, tried, rebelliously, to switch to Latin letters when Kremlin rule was wobbling, but it has since been forced to change back. In Central Asia, Cyrillic still survives, although Uzbekistan officially wants to change. In Montenegro, Europe's newest country after its secession from Serbia this summer, the Latin alphabet is increasingly popular, although in theory both still have equal status.

Does it matter? Alphabets work best with the languages for which they were invented. Everywhere else, the result is a confusing fudge of strange clusters of consonants, vowels and diacritical marks. In Slavic languages using the Latin alphabet, the sh and ch sounds, single letters in Cyrillic, become head-splitting combinations of sz, cz, ci, si, s, s, and c, as in the Polish word *szczesliwy* (meaning happy).

Bulgaria's transliteration is particularly chaotic. Nikolay Vassilev, the minister responsible for sorting it out, cites the town of Панагюрище, which can be transliterated in no fewer than seven different ways. The new system plumps for Panagyurishte. Being back on the map of Europe is one thing. Being consistently recognised by outsiders may be quite another.

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People-trafficking in Odessa

Sea of tears

Sep 21st 2006 | ODESSA
From The Economist print edition

A hub of the modern slave trade

THE ex-slaves are easy to spot among the passengers disembarking from the Istanbul ferry at Odessa. As other women wobble merrily away up the Potemkin steps, the victims of human trafficking look hungry, carry little luggage and, in winter, shiver in their summer clothes.

Odessa grew rich in the 19th century by exporting Russian grain. These days one of its main trades is in flesh. The city is a collecting hub for women from across the former Soviet Union who, unbeknown to them, have been snared by traffickers. From Odessa and elsewhere in Ukraine they are conveyed west to Europe and east to Russia, or south to Turkey and the Middle East. Twice a week ferries from Istanbul bring back those, often ill and pregnant, who have been deported by the Turks.

Katya, who is 19, was deposited in Odessa last week by the *Southern Palmira*, after a tragically familiar misadventure. Encouraged by a woman she thought was a friend, she went to Istanbul, expecting work in a restaurant (fake advertisements are also used for recruitment). To pay off alleged debts, she says, she found herself turning tricks in a disco. Her friend sold her to a pimp from another town where, she says, she slept six to a room, was threatened when she was too tired for sex, and given money only for food. She was freed by the police (others escape, and some are beaten for trying) and begged the money for her ferry ticket from an ex-client. Another young woman, conveyed to Odessa by the *Caledonia*, says she grew up in an orphanage, and was taken to Turkey by a woman who promised to adopt her.

It can be hard, says Natalia Savitskaya, of Faith, Hope and Love, an Odessa support group, to persuade these women that anyone wants to help them, rather than entrap them again. The group offers medical, legal and vocational aid, and helps to repatriate non-Ukrainians. There are awareness-raising programmes in schools and at the port and airport, plus a hotline for would-be emigrants. But there are always some, says Ms Savitskaya, who are convinced that it won't happen to them.

Poor, neighbouring Moldova is a big source of women. So is Transdniestria (see article), whose pig-headed authorities refuse to acknowledge the problem. Turkey is said to have become more sensitive to the crime; other receiving countries, such as the United Arab Emirates, less so. And the traffickers are diversifying. Fredric Larsson, of the International Organisation for Migration in Kiev, says that Russia and Poland have superseded Turkey as the top destinations. The slaves are now often males forced to work in construction or agriculture, sometimes with the connivance of local police. Forced begging and organ removal are also money-spinners.

Despite changes to Ukrainian law and a dedicated police unit, trafficking remains a tough crime to prosecute. Even if the recruiters (some of them former victims) are found, their bosses are often abroad. Many of the trafficked are reluctant to testify. Most women who land in Odessa are, like Katya, poorly educated, and often from villages that subsist on remittances from happier emigrants. Many have been abused at home. It isn't only poverty, says Inna Tsobenko of Veritas, an educational group. “They want a beautiful life.”

The combination of good looks, naivety and brutal unscrupulousness is always profitable. Several buildings in Odessa are adorned with reliefs of two young girls with nooses round their necks: they hanged themselves, legend has it, after falling prey to white-slave traders.

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Transdniestria and smuggling

Easy money

Sep 21st 2006 | ODESSA
From The Economist print edition

The vain effort to control one of Europe's dodgiest borders

"JAMAICAN rum...oranges from Jerusalem...cigars, fine silks and cocaine." These, said the Soviet writer Isaac Babel, were among the contraband that washed up in old Odessa. One could now add cigarettes, fake clothes and stolen cars. Some go to or from Transdniestria, part of Moldova that won quasi-independence in 1992.

In a referendum on September 17th Transdniestria's leaders asked its 550,000 residents if they wanted to stay independent and eventually join Russia (almost all do, they claimed), or preferred to rejoin Moldova (no, they said). Nobody outside Transdniestria recognised the poll, any more than they do its independence—not even the Russians, who prop up the place more out of geopolitical spite than territorial greed.

The vote probably had a more local aim. A deal between Moldova and Ukraine (called a "blockade" by the regime in Transdniestria's capital, Tiraspol) means that Transdniestrian companies need official Moldovan stamps to export eastward. And a European Union mission is helping Ukraine and Moldova to control their 1,220km (760-mile) border, including the 470km Transdniestrian stretch that, says the EU's General Ferenc Banfi, the Transdniestrians do not police. Now, says Ukraine's Lieutenant-General Viktor Myshakovsky, fewer smuggling groups work the border.

General Banfi sees little sign of the gun-running for which Transdniestria is notorious. He says there is easier money to be made by illicitly re-exporting goods transiting through Odessa. One racket is poultry: judging by their imports, says the general, Transdniestrians eat 12 times as much chicken as Germans. Ukrainian sugar is smuggled back to Ukraine, as are German cars. "Lies and black PR", says a Transdniestrian spokesman. "Transdniestria is no danger to anybody."

In Odessa containers are X-rayed with a machine donated by America to stop weapons-trafficking. Valery Orlovsky, of the customs service, says the old worries were of anti-Soviet propaganda and pornography. The port is hard to control—as is the border. Of the excess 40,000 tonnes of chicken Transdniestria imported in a recent eight-month period, says General Banfi, only 200 tonnes were caught on their way out again.

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Charlemagne

Hungarian dances

Sep 21st 2006
From The Economist print edition

What a prime ministerial gaffe reveals about economic reform in Europe

HERE'S something you don't hear a prime minister saying every day:

> “We screwed up. Not just a bit. Big time...It was perfectly clear that what we were saying wasn't true...You cannot mention a single major government measure we can be proud of...I almost died when I had to pretend that we were actually governing. We lied morning, noon and night.”

Thus Ferenc Gyurcsany, Hungary's prime minister, not pulling his punches with members of his own Socialist Party at a meeting after he won the election last April. When a tape of his comments was leaked this week, they proved bracing enough to bring thousands onto the streets, besieging the state broadcasting station and burning cars. Mr Gyurcsany called the riots democratic Hungary's “longest and darkest night”, though he refused to resign and did not even seem particularly abashed—he posted a transcript of the remarks on his website.

This was more than just a gaffe in the classic sense of the term (ie, a politician who is caught telling the truth). It was a new, perhaps understandable but not very commendable way for a country to face up to unpleasant truths, not just about its prime minister but about itself.

Sweden this week showed the proper way of doing such a thing: hold an election, tell voters what the problem is and win a mandate. Unfortunately, this does not always work in Europe. As Jean-Claude Juncker, prime minister of Luxembourg, once said: “We all know what to do, we just don't know how to win the election afterwards.” For fear of losing, politicians steer clear of telling voters harsh truths. For fear of being found out, they steer clear of outright lies. Many governments end up winning by avoiding hard choices and muddling through until a crisis becomes so imminent that tough measures are unavoidable.

Hungary is setting a new, distinctive course. Its government avoided hard decisions. (“We haven't done anything for four years. Nothing.”) It won its election. But then things changed. Unusually, Hungary's Socialist-led coalition is trying to do the right thing without being forced into it by a crisis. But it has not prepared the voters. This reflects the peculiar nature of Hungary's difficulties. It has a full-blown budget problem and some serious worries in the financial sector. But none of this is apparent in the real

economy. This is, in effect, a crisis for ministers, officials and financial markets, but not for voters.

For the past few years, successive governments have behaved with spectacular irresponsibility. (“No one in Europe has ever done such bloody stupid things as us.”) They doubled the minimum wage, increased public-sector wages and pushed up nominal incomes by almost 30% in two years. To cool the economy, the central bank raised interest rates, so Hungarians borrowed abroad at lower rates. By this summer, most new loans were in Swiss francs. The current-account deficit has now hit 9% of GDP and the budget deficit 10%—levels usually associated with countries in complete meltdown.

Yet, as a visit to Budapest quickly confirms, Hungary does not feel as if it is melting down. Growth, wages and the stockmarket have all been strong. The currency wobbled in the summer, but it has since stabilised. Until this week there was barely a perception of trouble. Maybe it is not surprising that the government was handsomely re-elected in April.

To its credit, it is making up for lost time. (“You can play around for a bit longer, but not for too long.”) The government says its austerity plans will cut a total of 8% off GDP over the next three years (6% from spending cuts, 2% from tax increases)—a gigantic amount. The public payroll will be trimmed by 20% and the number of top officials cut by 40%. Next are health reforms (ending universal health care free at the point of delivery), increases in tuition fees for higher education, lower gas subsidies, a property tax and cuts in pensions. “Sooner or later”, says Mr Gyurcsany, “things have to change—and sooner is better.”

Of course, there are doubts about his programme's design. Normally in central Europe, it is easier to raise taxes than cut spending, so the eventual spending cuts may be smaller. Hungary also remains highly vulnerable to emerging-market fatigue in its currency and stockmarkets (although this week's riots seem not to have unsettled investors much). But the most important question about the programme is not whether it will work—given a chance, it will—but whether voters will accept it.

Frank Ferenc

Before the election, the government clearly did not believe that they would. Now Hungarians are waking up to discover that they have been lied to for years. That is hardly the best way to reconcile them to austerity. Perhaps the best that can be said is that Mr Gyurcsany is at last being brutally frank in confronting problems that he (and the opposition) long pretended did not exist. He is gambling that his majority will hold together long enough for his austerity programme to start working, for the economy to recover and for his party to be re-elected again. (As he put it, “they can go ahead and rally in front of parliament...It's no big deal if we lose some support. We'll get it back.”)

A lot is riding on this gamble: not just Hungary's economy, but the adoption of the euro by new members and the very reputation of central Europe (now somewhat besmirched by the waywardness of Poland's rulers, the thuggery of Slovakia's and the non-existence of a Czech government). Given a choice between being honest with voters and winning an election, Mr Gyurcsany picked the second—as most politicians would. Given a choice between tough decisions and muddling through, he has now opted, unusually, for the first. Mr Gyurcsany is doing the right thing in the wrong way. Unfortunately for him, this week he was found out.

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The armed forces

No more missions, please

Sep 21st 2006
From The Economist print edition

AFP

The army needs more resources to meet its current commitments

ON SEPTEMBER 19th Des Browne, the defence secretary, admitted what British soldiers leading a NATO peacekeeping force in Afghanistan have known for several months. His ministry grossly underestimated the strength of their Taliban adversaries, who have killed nearly two dozen Britons in recent weeks.

He might have added—for this too is well known—that over the same time the government has rejected pleas to reinforce the 5,000-strong British contingent with a mobile reserve of 1,000 men. That force would have provided insurance against the unpredicted, including Taliban attacks that proved fiercer than expected. It would have been in line with basic military planning too. The government says that it wants its NATO allies to share the burden, but it is also true that the army itself is too stretched to do more.

Over the past seven years, the government has given the armed forces less while asking them to do more. After a decade of stinging cuts, defence spending has stayed fairly steady since 2004 at around £32 billion ($60 billion), or 2.5% of GDP. Given the heavy burden of operations, and the fact that the Treasury never quite reimburses the armed services for the men and machinery they wear out, this amounts to dwindling resources.

According to the latest deep strategic think, which was carried out in 2003, British forces should be able to conduct two medium (or brigade-sized) operations, only one of which involves significant combat, as well as one smaller operation. Instead they are fighting wars in Afghanistan and in Iraq, where Britain has over 7,000 troops, including a divisional headquarters. They are also keeping peace in Kosovo, with 900 soldiers, and in Northern Ireland. And when short-term needs arise, such as the evacuation of British citizens from Lebanon last month, the armed services have to meet them. “Can we cope?” asked the new army chief, General Sir Richard Dannatt, in an interview with the *Guardian* newspaper this month. “I pause. I say ‘just’.”

Without emergency measures—which might include cancelling training, leave and retirements—the armed forces, and especially the army, could make no telling contribution to another mission—for the United Nations in Lebanon, for example, or in Darfur. Indeed, the army would struggle to fill the breach during a hearty firemen's strike. As for the badly-needed reserve for Afghanistan, even if sufficient British infantrymen could be found (maybe from Northern Ireland), helicopters, intelligence experts, engineers and logisticians would still be lacking.

British soldiers are supposed to train for 24 months between six-month deployments. The average interval is currently 21 months. But this figure masks intervals of less than a year for prized infantry

units and specialists such as intelligence experts, petroleum operators and medics.

Budgets, too, are strained. The army's land command must make savings of £40m this year, but there is scarcely any fat to be trimmed. OPTAG, for example—a stage-set city where soldiers receive operational training that at the moment includes mock fights against Talibs and suicide bombers—has only four armoured Land Rovers for each training battalion.

As tempers fray, the government's critics are once again decrying recent infantry reforms. In amalgamating the last single-battalion regiments, four infantry battalions were cut (though one survived as a new special-forces support unit).

The criticisms are not wholly just, for the reforms were, by and large, sensible. They ended an old practice of moving and retraining regiments that made them unusable for at least six of every 24 months. Out of 40 infantry battalions, including six that were permanently committed to Northern Ireland, only about 26 were considered deployable in the old days. Now, with regiments reformed and Northern Ireland calmed, the surviving 36 battalions are in theory ready at any time. Moreover, since the army was 2,000 men under strength when that was supposedly around 104,000, in mid-2005, it is only a little lighter now that the authorised complement is just under 102,000. Yet the fact is that the government cut the infantry when it had barely enough to go around.

Plainly, either defence spending must increase or the armed forces will have to do less. The third option—saving money by cutting flab and procurement—has been more or less exhausted for now. In 2004 the Royal Air Force lost 7,900 jobs, some training planes, an air base and a squadron of Tornados. The navy's fleet of destroyers and frigates was cut to 25, about the minimum that is currently imaginable.

Meanwhile, the ministry is wedged into several Cold War procurement programmes, including the acquisition of 144 mostly-unwanted Eurofighter Typhoons at £50m a pop. In next year's comprehensive-spending review, the defence budget will probably rise. And in the next strategic defence review, which could come next year, Britain's capability will be reassessed.

For the army, meanwhile, this is a confusing time. Soldiers are usually glad to be busy in a cause that their family and friends support. But enthusiasm for the current conflicts is shaky at best: a charity appeal by the three services for veterans of the 1981 Falklands campaign raised £11.5m; the equivalent for those who fought in Iraq has raised £350,000. Nor has the government, caught between downplaying the violence in Afghanistan and applauding the troops, been overly generous. Soldiers wounded in Afghanistan and evacuated to a Birmingham hospital had, until recently, to pay to watch television.

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Court martial

Branded

Sep 21st 2006
From The Economist print edition

The first British soldier to be charged with a war crime has pleaded guilty

CORPORAL DONALD PAYNE of the Queen's Lancashire Regiment is the first British soldier to be convicted of a war crime. At a court martial this week he pleaded guilty to the charge of “inhumane” treatment of Iraqi civilians but denied manslaughter. Baha Mousa, a hotel receptionist, died after allegedly being beaten at a British military camp in Basra, southern Iraq, in September 2003. Six other soldiers charged in relation to his death have pleaded not guilty.

Despite dozens of allegations, there have been only six formal investigations into the alleged maltreatment or killing of Iraqi civilians by British military personnel. Before this week, only one, in which photographs were produced showing British soldiers physically abusing and humiliating prisoners, had resulted in a conviction. No other British soldier had ever been charged with, still less convicted of, a “war crime”—a phrase that conjures up terrible images of genocide and other atrocities tried at Nuremberg and now at the international tribunals for Rwanda, Cambodia, Sierra Leone and the former Yugoslavia.

Treating prisoners inhumanely has been a crime under British military law for centuries, and was incorporated into English statutory law by the Geneva Conventions Act in 1957. But it was not until that act was amended in 1995 that the offence was called a “war crime”. In 2001 the International Criminal Court Act extended the general label to a range of existing offences. Corporal Payne and two colleagues are the first soldiers to be prosecuted under that act.

Why invoke it now? Other British soldiers have been accused of even more serious crimes, including the murder of Iraqi civilians, without so emotive a term being summoned up. The fact that these alleged offences were not one-off incidents, but are said to have been repeated over a period of 36 hours, seems to have influenced the decision to brand them as war crimes. It will also do Britain no harm in the Muslim world to be seen to be taking such crimes seriously.

Opening the court martial for the prosecution, Julian Bevan said: “We are not dealing with robust or rough handling, which is bound to happen in the theatre that existed in Iraq, but something far more serious. We are dealing with systematic abuse against prisoners...” Mr Mousa suffered 93 injuries, the court was told, including fractured ribs and a broken nose, before he died.

Might a similar fate befall Corporal Payne and the other soldiers? Mr Justice McKinnon, the judge at the court martial, made legal history when he ruled that pictures of the defendants' faces could not be shown, nor their addresses given out, for fear that they could become terrorist targets.

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The wages of football

All bunged up

Sep 21st 2006
From The Economist print edition

Footballers should be free to earn even more

DESPITE its aspirations to nobility, sport has proved as corrupt as any other human activity over the years. On September 19th “Panorama”, a BBC programme, cast aspersions on English football, alleging bribery and other insalubrious dealings. The Football Association, the game's governing body, has promised to investigate and an existing inquiry under Lord Stevens is due to report on October 2nd.

Two quite different sorts of wrongdoing were alleged. The first was that club managers were taking “bungs”, or bribes, to lubricate the purchase of players from other clubs. The second was that they were flouting the prohibition on “tapping-up”—approaching players to offer them jobs without the permission of their current employers. Both are reflections of an odd system that binds players to their clubs.

For footballers are not just better paid than most people; they are also governed by a different set of employment rules. They are often tied into long contracts—for as long as eight years in some cases. A player who wants to be released early has not only to find a new job (after asking his club for permission) but also to convince the new club to pay a transfer fee as well as his salary. He cannot even discuss such a move without express authorisation.

Such restrictions would seem bizarre to other highly paid workers—investment bankers, for example—who are free to discuss a job change whenever they like with whomever they please. If they do leave one employer for another, says Mark Hewland of Simmons & Simmons, a law firm, courts are generally reluctant to hold them to notice periods longer than six months.

Football clubs in the Premier League, which spent £330m ($625m) on transfer fees this year, argue that long contracts and the attendant transfer fees keep the game exciting. They help level the field between rich clubs which can afford the best players and poorer ones whose stars are poached, by rewarding the latter for their loss.

But the system is not working. How well clubs do is closely correlated to how much they spend on players. League standings have fossilised as wage bills have risen, and the gap can be enormous. In the 2004-2005 season Chelsea (the champions) spent £109m on wages, while Norwich City (relegated to a lower league) spent £17m. Transfer fees are not redistributing enough cash to close that gap, nor to compensate clubs sufficiently for the loss of young players whose value only becomes apparent later in their careers.

Transfer fees mostly benefit clubs by diverting money from players to their employers, says Stefan Szymanski, an economist at Imperial College London. Freeing footballers to move at will would bring the sport into line with other lines of work and allow players to earn something closer to their market value.

Some players escape the restrictions by seeking employment abroad, since international transfer rules are less onerous. Some also suspect that home-grown restrictions may be illegal. Roger Welch, a law lecturer at Portsmouth University, says that, if a test case were brought, the contracts system could well be struck down by the courts. And that would prove a much bigger shock to the beautiful game and its fans than news of a few bribes.

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Christianity

A new Jerusalem

Sep 21st 2006
From The Economist print edition

Christianity is collapsing everywhere except London

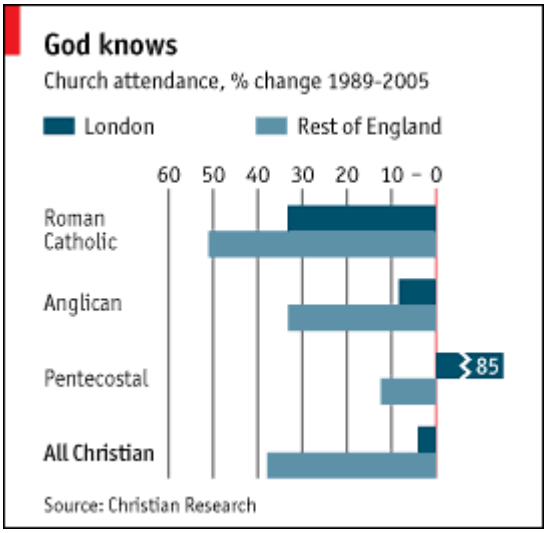
THE English church of most people's imagining is rural, and so is the English Christian. “The modern town-dweller has no God and no Devil,” complained the dean of St Paul's Cathedral in 1919. True then, perhaps, but the landscape of belief in England is changing fast. The latest report of the English Church Census, an independent count of bums on pews which is carried out every seven to nine years, contains the surprising news that London, the modern-day Gomorrah, is now more devout than almost everywhere else.

In 1979, when the first census was carried out, London was the least observant region of Britain. One in ten Londoners could be found in church on a given Sunday. That compared with one in six in poor northern counties such as Cumbria and Lancashire and with one in five in heavily Catholic Merseyside. The wealthy Home Counties, which surround London, were almost as godless.

The most recent church census shows a reversal of this pattern. Churchgoing in London has declined in the past few decades, but only slightly: in May of last year 8.3% of people went to church on Sunday. Elsewhere, especially outside the Home Counties, Christianity has been routed. In Cumbria 7.1% of people went to church, and in Lancashire 6.5% did. Almost by default, London has become the second-most observant region of Britain after Merseyside, and will soon overhaul it.

There are two main reasons for Christianity's peculiar survival in the capital. The first is immigration. In the past few years London has imported the descendants of many of the people who were converted abroad by 19th-century British missionaries. Kingsway International Christian Centre, which attracts more than 10,000 people to its Sunday services, claims that 46 nations are represented in its congregation, many of them African. Black African immigration is the chief reason for the rapid growth of Pentecostal churches in London (see chart).

Immigration has slowed the decline in almost all denominations, including Catholicism and Anglicanism. In England as a whole, 12% of Anglicans and 17% of Catholics are now non-white. And a growing number of white Christians are immigrants too. Croatians and Poles have opened churches in London. One of the capital's biggest congregations is Hillsong, an Australian import with a notably Antipodean congregation. It meets at the Dominion Theatre in between performances of “We Will Rock You”, a musical tribute to the sexually unorthodox rock band Queen.



The other reason London still goes to church has to do with the city's odd social mix. The city has relatively few working-class whites—the group that has lost faith most dramatically in the past few decades. It does, however, have plenty of wealthy whites. Churchmen are ambivalent about them, partly because of a saying about camels and needles, partly because they suspect that some middle-class folk only come to church because they want to get their children into religious schools.

But come to church they do. Some of the capital's largest congregations, such as the evangelical Holy Trinity Brompton, are stuffed with young professionals. The church has dealt with young people's tricky habit of moving frequently by “planting” new churches, thus creating a London-wide network. Such

initiatives, together with the piety of young black Londoners, explains the most striking finding of the English Church Census. Fully 57% of all people in their 20s who went to church in May last year did so in the capital.

As English Christianity's centre of gravity moves away from crumbling rural churches and provincial cathedrals towards the multicoloured congregations of the capital, it will face pressure to change. In the past three years the worldwide Anglican church has faced bitter arguments over homosexuality. These have revealed how hard it is to reconcile the views of liberal Americans and Britons with those of conservative Africans. Such fissures are gradually being imported into domestic churches too.

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Muslim converts

Islam's makeover

Sep 21st 2006
From The Economist print edition

Why some Britons are embracing Islam

CONVERTS to Islam have an image problem. Women who don Islamic garb are often pitied for their submissive lives behind the veil. And a handful of converts, mostly men, have been implicated in terrorist plots. Even the pope has waded in: on September 12th he appeared to link Islam to "violent conversion" in a speech. He apologised five days later, after riots in many countries with Muslim populations.

Some commentators in London, too, have taken to worrying that the British establishment is enthralled by Islam. They point to Joe Ahmed-Dobson, the son of a former government minister, and Yahya Birt, the son of a former BBC boss. These worries grew when it emerged last month that three of the 25 Muslims arrested on suspicion of involvement in a plot to blow up planes over London were new believers. And this, in turn, appeared to bear out a government report, leaked in July, which said that converts were being wooed by radical Muslims.

Yet statistics to substantiate the fear that "reds under the bed" have been replaced by hordes of traitorous new Muslims are sparse. The 2001 census in Scotland, unlike the exercises in England and Wales, included a question on current and former religious beliefs. Yahya Birt, a research fellow at the Islamic Foundation, a think-tank in Leicester, established that 3% of Scottish Muslims were converts. He used those figures to estimate that in Britain as a whole around 14,200 believers are converts—only 1% of the country's 1.6m Muslims. Converting Britons to Islam is hardly a boom industry, he says. "Islam is one of the items in the supermarket of faiths, but the rate of conversion is not spectacular."

Unlike some Christian sects, Islam eschews heavy proselytising. One group, the Islamic Propagation Society, is typically low-key in seeking converts. Its members set up trestle tables at weekends in several big cities and hand out leaflets. Umar Tate, its chief, says that media interest brings them "good business". The pope's speech has attracted many to their stalls, he says.

Academic insight into why Britons convert is also sparse. A researcher from Leeds University, Myfanwy Franks, questioned converts before and after the attack on America in September 2001. She suggests that the appeal of Islam is changing. Before that date many were drawn to Sufism, a mystical and relatively tolerant strand of Islam. Her work since then suggests that new converts prefer a more austere form of the religion.

Rebecca Masterson, once Catholic, became a Muslim six years ago and has interviewed women converts for a research project at London University. Some embrace Islam, she said, because in an increasingly raunchy Britain they dislike being seen as sexual objects—the veil frees them from the male gaze. Many male converts, who include men of Afro-Caribbean stock, prize the Muslim family model in which men are idealised as dignified providers and protectors, she says. Other studies suggest that Islam has helped people escape from drugs and alcohol. Men are more likely than women, it seems, to react against British policy in the Middle East by embracing a violent form of Islam.

Many converts praise the recent mini-industry that has sprung up to help them adapt. There are now "New-Muslim projects" in most British cities. Miss Masterson says that her life has changed completely since her conversion—she wears a headscarf and gown, and would rather socialise with Muslim "sisters" than spend time unchaperoned with men. Luckily for single converts, a number of matrimonial agencies offer help to those seeking love.

The New-Muslim project in Leicester offers advice on "coming out" as a believer to non-Muslim relations, who are often appalled by the news. It offers guidance on dress and practices such as ritual washing and hair removal—and on including non-Muslims in weddings and funerals.

On September 20th the home secretary, John Reid, was heckled at a meeting with Muslim parents by an angry convert, Abu Izzadeen—hardly the peaceful image of Islam that most Muslims are after. Converts of any sort tend towards an excess of zeal. But not all do—and they might be the very people to bridge the increasingly dangerous gap between Britain's Muslim minority and its nervous mainstream.

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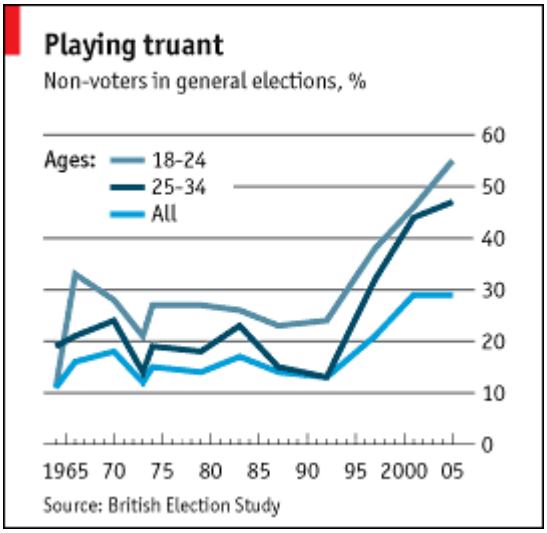
Politics

Testament of youth

Sep 21st 2006
From The Economist print edition

Political parties start talking to an elusive constituency



MOST marketing operations pay close attention to what young people are buying and thinking. Not Britain's political parties, however, for the simple reason that the under-30s are unlikely to go anywhere near a polling booth. In 1964, 11% of those aged 18 to 24 claimed not to vote, according to the British Election Study. At the general election last year that figure rose to 55% (see chart). A report this week by Reform, a think-tank, suggests that this reticence is costing them dearly. Changes in government policy, it argues, have turned being young into a terrible bore.

There are already two powerful economic forces working against the so-called "IPOD generation" that are beyond the government's control. First, the ageing of the population is fast increasing the ratio of people in retirement to those of working age. So the young can look forward to handing over a rising proportion of their pay to support the oldies in their decline. Second, the cost of buying a house in places where people want to live has shot up beyond the reach of the young. In 1995 24% of all first-time homebuyers were under 25; today, less than 15% are, according to the Halifax, a bank.

This much is uncontroversial. But the report also argues that the Labour government has made life worse for young people, in three ways. First, increased spending on health care has tended to benefit the old, who use the NHS more than the young. Second, tilting the tax and benefit system towards people with children has transferred money from the young to the middle-aged. Third, higher tuition fees are landing university graduates with hefty debts. And the future doesn't look much better: the government's proposed pension reforms, along with the decline of defined-benefit company-pension schemes, make grim reading for the under-30s too.

"These changes ought to have brought about a re-examination of the burden of taxation on this age group," says Nick Bosanquet of Imperial College London, one of the authors of the report. He reckons that, after paying various taxmen and lenders, graduates take home only around half of their salaries. The average for all salaried workers is about three-fifths.

Are things really that bad? When examined in a freeze-frame, being young does not look much fun financially. But welfare states are meant to transfer resources from the vigorous to the fragile. Some benefits are merely deferred: today's 25-year-olds will have babies and hip replacements one day. And although people in their 20s and 30s tend be heavily indebted this passes when they sink into their 40s and 50s, says Richard Disney of Nottingham University.

Even so, the feeling that young people are being squeezed presents a political opportunity for the opposition parties. David Willetts, the Conservative shadow education secretary, said in a speech last year that the young "could be forgiven for believing that the way in which economic and social policy is now conducted is little less than a conspiracy by the middle-aged" against them. The Liberal Democrat commission on tax policy worried in August about inter-generational unfairness too.

There will be more of such talk. For the Tories, it offers a way to discuss reducing spending without sounding as if they are merely the mouthpiece of the wealthy. It gives Lib Dem leaders a way to argue

activists out of promising to out-spend Labour. And it might even persuade some of those gloomy 25-year-olds to vote.

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Teaching mathematics

Out of school

Sep 21st 2006
From The Economist print edition

The way to save minority subjects

IN TIMES of inflation, smart investors look for a safe haven. So, with universities grumbling about grade inflation and Cambridge warning applicants away from 20 fluffy A-level subjects, it is perhaps not surprising that the fastest-growing A-level by far is “further mathematics”, the second, harder exam in what is already seen as one of the hardest subjects of all.

In the past scientifically-minded boys at selective schools would take A-levels in maths, further maths and physics, and then study yet more maths at university. But recently many comprehensive schools, without enough keen A-level students to justify redirecting a precious maths teacher from teaching the basics to younger students, have dropped further maths entirely. Students, meanwhile, have been lured away by fancy new subjects such as media studies and information technology. Afraid of turning away talented state-school applicants, most universities stopped asking for further maths, even for maths or physics degrees—removing any remaining inclination among state schools to offer the subject.

The number of students taking A-level further maths fell from around 15,000 in the late 1980s to a low of some 5,000 by the late 1990s. Now, however, it is picking up. Last summer 7,270 students took the exam, up more than a fifth on the previous year. And this autumn, for the first time, every A-level student in England can study further maths, if not at school, then at one of the 46 centres set up by the Further Mathematics Network (FMN).

The network's students work independently much of the time, using books and on-line material. Tutors—some of them university staff and students—visit or confer by video once a week or a fortnight, staying in touch meanwhile by e-mail. Groups from five or more schools meet occasionally for study days.

The FMN was first tried out in 2000 by Mathematics in Education and Industry (MEI), a curriculum-development body, with funding from the Gatsby Charitable Foundation. The government then chipped in £10m to get centres up and running all over England. As well as teaching nearly 600 students directly, the FMN is also helping more than 650 schools to teach the syllabus themselves, supporting teachers who might otherwise feel out of their depth. And a clever redesign of the syllabus has made it easier to teach further maths over two years along with standard maths, thus boosting its popularity. Before that, students had to wait until they had done a year of A-level maths before they knew enough to aim higher.

Universities are delighted to see the return of students who need less hand-holding. John Begg, who runs the FMN centre in Manchester, says that more than half of maths undergraduates at the city's university have done further maths, up from a quarter just a few years ago. The maths department at the University of Warwick, one of the top-ranked in the country, is thinking of requiring further maths again, for the first time in more than a decade.

For students, the main attraction of the subject is getting a qualification with hard-currency clout. Maths departments are so keen on candidates with further maths that they often accept them with lower grades in other subjects. And students looking for places on sought-after courses such as medicine and veterinary science see advanced maths as a way to stand out.

There are signs, too, that the wider availability of further maths will boost the dwindling number of maths teachers. More graduates may be willing to pass up tempting salaries elsewhere for the chance of teaching something really interesting.

Language teachers might also take a leaf from the further-maths textbook. Since 2004, when studying a foreign language beyond age 14 became optional in state schools, the number of students taking a

language at GCSE has dropped dramatically. French and German have been hit particularly hard, with a 30% fall in two years. Some students have quit with relief, but others have been put off by schools that now schedule languages against other subjects. A distance-learning scheme might help to stem that decline too.

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Bagehot

Still in the game

Sep 21st 2006
From The Economist print edition

Despite a difficult year and doubts about their new leader, the Liberal Democrats have plenty to look forward to

IS THE Liberal Democrats' glass half full or half empty? After their conference in Brighton this week, it's still hard to tell. But that the question can even be put, after the turbulent past nine months, is testimony to the resilience of Britain's third party.

By rights the Lib Dems should be on their knees. They ditched—inexpertly—a popular but chaotic leader whose alcoholism had been an open secret for years. They replaced him with a distinguished but rather doddery pensioner, after a contest in which half the candidates spectacularly self-destructed. And they have had to confront the emergence of an energetic and strategically astute Tory leader determined to steal some of their catchiest tunes—in particular, greenery and localism.

Despite everything, the Lib Dem vote has held fairly steady in opinion polls at just under 20%. In last May's local-government elections the party won a higher share of the vote than Labour. And it has lost none of its ability to achieve spectacular results in by-elections, winning the Dunfermline seat where Gordon Brown has his home and coming within an ace of claiming Bromley, the 17th-safest Conservative seat in the country.

In itself, that says something about the paradox of the Lib Dems. On the one hand they crave to be taken seriously and are convinced that, if only the electorate can be persuaded to think of them as a credible alternative government, power is theirs for the taking. On the other hand, they benefit from being held to a lower standard than the two bigger parties and from being seen as a convenient receptacle for the votes of the disaffected.

In Charles Kennedy they had a leader who, for all his frailties, understood how to maximise the party's appeal to the apolitical and the unattached, though he never remotely looked as if he had the makings of a prime minister. As he demonstrated again this week, in his first big speech since his ousting, Mr Kennedy is good at mood but hopeless at substance. To his credit, Mr Kennedy's successor, Sir Menzies Campbell, is doing his best to wean his party from its customary frivolity.

Sir “Ming”, as he likes to be known, lacks zing. Attempts to make him appear less stuffy by getting him

to prance around the seafront with young female MPs and make (inaccurate) references to the Arctic Monkeys were uniformly cringe-making. But he is both braver and more serious than Mr Kennedy.

These qualities were in evidence during the conference's set-piece event, a debate on whether to adopt a package of tax reforms put together by Vince Cable, the shadow chancellor, and the environment spokesman, Chris Huhne. The package was controversial, not so much because it embodied a radical switch from taxing earnings to taxing pollution as because it dropped the party's commitment to raise the top rate of income tax from 40% to 50%. To Mr Cable and his allies, it was important to show that the Lib Dems did not want to penalise work and ambition.

But for many in the party, the 50% rate identified the Lib Dems as the party of social justice. Never mind that Mr Cable's package was already strongly, indeed riskily, redistributive. And never mind that at the last election the revenue supposedly gained by soaking the rich would have been frittered away on middle-class subsidies such as abolishing university-tuition fees rather than used to fight poverty. The 50% rate was a badge of honour that distinguished the Lib Dems from pusillanimous Labour and wicked Tories.

Had Mr Kennedy, with his hands-off style, still been leader, there is little doubt that the tax package would have been voted down. But when it was pointed out to Sir Ming what effect defeat would have on his authority, he chose to lead from the front. In other ways too, he is a marked improvement on his predecessor. There is a new feeling of professionalism in the party. Meetings start on time and are effectively chaired. Out-campaigned by the Tories last year, the Lib Dems have learned the lesson and next time will have better technology and more money.

Whether greater discipline and more coherent policies will make much difference in the short term to the Lib Dems' prospects is another matter. The party should take some seats from Labour in the north at the next general election if Mr Brown, Tony Blair's probable successor, fails to reinvigorate his party's shrinking base, but they are almost certain to lose some southern seats to the Tories. Voters may well conclude that the Lib Dems still have the best green credentials, but, by appearing decent and well-meaning, David Cameron has made it respectable for lapsed Tories to return to the fold.

The stuff of dreams

A more enticing prospect beckons, however. The chances of expanding the number of Lib Dem MPs beyond the present 63 may be low but those of a hung parliament have rarely been higher. It is difficult to imagine this determinedly leftish party making common cause with the Tories, however cuddly Mr Cameron may be. Nor would it be willing to do more than help a defeated Labour Party govern for a year or two.

But, whisper it quietly, some senior Lib Dems think that Mr Brown may already be pondering the pros and cons of changing the voting system in exchange for a more formal and lasting alliance with their party. There are plenty of Labour MPs who believe in “fair votes” and support the recommendation of the Jenkins Commission that the current first-past-the-post system be made a bit more like the proportional representation that the Lib Dems have long campaigned for.

A deal along lines such as these would revive Tony Blair's old dream of creating an electorally unbeatable “progressive” coalition in Britain. Sir Ming and Mr Brown are often seen together on the Edinburgh plane from London. Having waited for a decade to get to Number 10, what might not Mr Brown be willing to do to stay there?

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Splitting the digital difference

Sep 21st 2006
From The Economist print edition

Computing: A variety of novel approaches aim to bridge the gap between mobile phones and PCs in the developing world

WHAT is the best way to make the benefits of technology more widely available to people in poor countries? Mobile phones are spreading fast even in the poorest parts of the world, thanks to the combination of microcredit loans and pre-paid billing plans, but they cannot do everything that PCs can. For their part, PCs are far more powerful than phones, but they are also much more expensive and complicated. If only there was a way to split the difference between the two: a device as capable as a PC, but as affordable and accessible as a mobile phone. Several initiatives to bridge this gap are under way. The hope is that the right combination of technologies and business models could dramatically broaden access to computers and the internet.

Perhaps the best-known project is the one dreamt up by a bunch of academics at the Massachusetts Institute of Technology, in Cambridge. The scheme, called “One Laptop Per Child”, aims to use a variety of novel technologies to reduce the cost of a laptop to $100 and to distribute millions of the machines to children in poor countries, paid for by governments. Nicholas Negroponte, the project's co-founder, says he is in talks to deliver 1m units apiece to the governments of Argentina, Brazil, Nigeria and Thailand. But across the Atlantic in Cambridge, England, another band of brainy types has cooked up a different approach. They have devised a device that allows one PC to be used by many people at once.

The organisation is called Ndiyo (the Swahili word for “yes”), and was founded by Quentin Stafford-Fraser, a former researcher at AT&T. “We don't want to have cut-down computers for poor people,” he says. “We want them to have what we have—so we need to find a better way to do it.” The system exploits a little-used feature in operating systems that permits multiple simultaneous users. Ndiyo's small, cheap interface boxes allow multiple screens, keyboards and mice to be linked to a single PC cheaply via standard network cables.

This allows a standard PC running Linux, the open-source operating system, to be shared by between five and ten people. Computers today are many times more powerful than those of just a few years ago, but are idle much of the time. Ndiyo is returning computing to its roots, to a time when they were shared devices rather than personal ones. “We can make computing more affordable by sharing it,” says Dr Stafford-Fraser, as he hunches over a ganglion of wires sprouting from machines in Ndiyo's office. In much of the world, he says, a PC costs more than a house. Internet cafés based on Ndiyo's technology

have already been set up in Bangladesh and South Africa. Mobile phones are used to link the shared PCs to the internet.

Another approach is being taken by Microsoft. The software giant has devised a plan to provide PCs to the poor using a business model borrowed from pre-paid mobile phones. Called FlexGo, the scheme is designed to appeal to people who cannot afford a PC because it is too expensive to pay for one all at once, or because their income is irregular or cyclical (as with farmers).

FlexGo is a rent-to-buy arrangement in which the customer determines the frequency of payments. People pay around half the price of the computer and software at the start and then pay to use it by buying scratch cards. Once their credit is depleted, the machine goes dark, just as a mobile phone does. But after about two years of use, Microsoft estimates, the full price of the PC and the software has been paid, and the owner then has unlimited use of it. Craig Fiebig of Microsoft says this approach can open up an untapped market. In a trial in Brazil 30% of participants said that they could not otherwise have afforded to buy a PC.

Mr Fiebig suggests that the scheme could even provide a chance for entrepreneurs to resell computer time, just as people in poor countries (such as the “telephone ladies” of Bangladesh) make a business of charging others to use their mobile phones. Microsoft is also working on another way to strike a compromise between PC and handset. In June it unveiled a prototype system that allows people to plug a keyboard and an ordinary television into a mobile phone, thus enabling it to function like a simple PC.

Hardware is only part of the story of course; how can software be made cheaper, too? Microsoft has developed a scaled-down version of its Windows operating system for developing nations, called XP Starter Edition. By removing features and dropping the price, it hopes to reduce software piracy. It could also make Windows more competitive with free, open-source software, which is popular in Brazil, China and other parts of the developing world. Although such software is free, it can be harder for novices to use.

Mark Shuttleworth, a South African software entrepreneur best known for having paid $20m in 2002 to blast into space aboard a Russian rocket, is developing Ubuntu, an easy-to-use open-source desktop operating system that is meant to overcome this problem. His Shuttleworth Foundation has also created something called the “Freedom Toaster”, a kiosk that distributes open-source software by letting people pick programs and burn them on to free CDs. So far around 30 kiosks have been set up in South Africa, but the idea is also generating interest elsewhere as a novel way to spread software in places that lack fast internet links.

And even when the hardware and software are available, there is the question of technical skills. To help train future techies, Cisco, the leading maker of network equipment, supports free “networking academies” run by local technical experts in 63 developing countries. One instructor, Mohammad Tariq Meeran of Kabul University in Afghanistan, explains that there are not enough PCs for each student in his computer-science department, so they must take turns in class. A system like Ndiyo's would be a boon by allowing one computer to be used by many students, he said in an interview on his mobile phone—Afghanistan lacks reliable fixed lines.

Will any of this work? In the past, efforts to bring computers to the poor often failed because they were based on Western ideas of how technologies ought to be used or paid for. Governments and foundations doled out money, only to see it poorly spent or pocketed by middlemen. And when market-oriented approaches were tried, they often presumed that PCs were things individuals owned and paid for upfront. By borrowing ideas from mobile phones and taking greater account of local conditions, these schemes have a better chance of making computing accessible. “We need to find a solution,” says Dr Stafford-Fraser. “This is not necessarily the best solution—but it does work now.”

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Behold, the bus of the future

Sep 21st 2006
From The Economist print edition

Transport: Maglev trains are expensive; buses are cheap. The Superbus, a high-tech road vehicle, is a compromise between the two

IT LOOKS rather like a futuristic stretch limousine, but its actual function is rather more populist: the Superbus is a novel public-transport system being developed in the Netherlands by the Delft University of Technology. It is an electric bus designed to be able to switch seamlessly between ordinary roads and dedicated “supertracks”, on which it can reach speeds of 250kph (155mph). It could thus present an alternative to much more expensive magnetic-levitation trains. The Superbus would be driven in the usual way on roads and an autopilot would be engaged when it reached a supertrack.

Though it is as wide and long as a standard city bus, the Superbus is only 1.7 metres high, or roughly the same height as a sports-utility vehicle. Joris Melkert, the project's manager, explains that the designers managed to keep the Superbus this small by doing away with the central aisle usually found in today's buses, a vestigial design feature that allows passengers to stand upright, but also gives conventional buses the aerodynamic profile of a brick.

The low-riding Superbus, in contrast, has a separate door for each of its 30-odd seats. The low ceiling and the use of lightweight materials make for a far more streamlined vehicle, which in turn requires only a modest electric motor: though engineers have not yet decided whether the Superbus will be powered by fuel cells or batteries, they estimate that it will be able to accelerate from rest to 100kph in a leisurely 36 seconds.

The individual doors also allow for rapid loading and unloading of passengers, which will need to be fast if the Superbus is to live up to its promised door-to-door mission: instead of making predetermined stops, the vehicle will pick up and drop off passengers based on their text-messaged requests. This kind of flexibility is a central tenet of the project; the estimated three-year lifespan of a Superbus (as opposed to thirteen years for a standard European bus) will also allow the latest technologies to be phased in quickly as they become available.

To start with, that might include satellite-based tracking to keep the Superbus on course, sensors to scan the road for obstacles up to 300 metres ahead and a smart suspension system that remembers the rough spots in the road. The special supertracks, too, will form a technological testing ground, storing solar energy in the summer and using it in the winter to heat up the lanes and prevent them from freezing and cracking.

Conveniently enough, much of the technology comes from Delft University itself, which houses one of the world's largest aerospace-engineering departments. (The headquarters of the European Space Agency are located in nearby Noordwijk.) The university's industrial-design department has cooked up the Batmobile-like blueprint for the prototype; the project's chief designer, Antonia Terzi, previously worked on Formula 1 cars for Ferrari and Williams-BMW.

Some detractors have suggested that making so many stops would erode the Superbus's speed

advantage, and others question whether a new cog in the Netherlands' already-intricate transport infrastructure is even needed. Furthermore, the Superbus does not yet exist, whereas maglev trains are already operating successfully in Shanghai.

The future of the project is uncertain. Its intended route, a new transport link connecting Amsterdam with the northern city of Groningen, was recently scrapped by the Dutch government (although the Superbus was deemed the most feasible of all the options considered, which also included a maglev train). In spite of the setback, the project has since received an extra €7m ($9m) in government funding, plus €1m from Connexxion, a local bus company. The Superbus team's latest plan is to unveil a fully functional prototype at the Beijing Olympics in 2008. With its combination of low emissions, high speed and snazzy design, this might prove to be a bus that is worth waiting for.

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Pipe in the sky?

Sep 21st 2006
From The Economist print edition

Transport: The latest attempt to revive the fortunes of airships involves using them to construct oil and gas pipelines

AP

EXTRACTING oil and gas from remote and landlocked places can carry a heavy price tag. Over the next decade $50 billion is expected to be spent building new pipelines over land, according to one estimate. In an attempt to reduce these costs, the oil and gas industry is considering a new approach: airships. These would be used not as giant airborne tankers for carrying oil or gas from wells, but as delivery trucks, carrying materials, equipment and supplies to remote places for laying pipelines.

At the moment, logistics accounts for a quarter of the cost of building a pipeline, says Luc Henriod, executive secretary of the International Pipeline and Offshore Contractors Association (IPLOCA), based in Geneva in Switzerland. In Kazakhstan laying one pipeline required 800km (500 miles) of new roads to be built and a further 800km to be repaired so that supply trucks could reach the pipeline. By delivering materials and equipment directly to the site, airships could, in theory, dramatically reduce costs and speed up construction. As a bonus, the pipeline would also have much less effect on the environment, notes Ron Hochstetler, of Science Applications International Corporation, an engineering firm based in San Diego, California, who has carried out feasibility research for IPLOCA on the use of airships in laying pipelines.

In theory, airships are well suited to heavy lifting, since they benefit from a law of increasing returns: doubling the length of an airship increases the surface area (and hence the weight) by a factor of four, while the volume (and hence the lifting capacity) goes up by a factor of eight. In practice, however, they have a chequered history. Who can forget the fire that dramatically destroyed the *Hindenburg* in 1937, killing 36 people? More recently but less perilously, CargoLifter, a German firm that planned to develop a dedicated heavy-lifting airship, went bust in 2002 with only a huge empty hangar and a few blueprints to show for it.

Efforts by America's top military boffins to develop heavy-lifting airships have faltered, too. In August 2005 the Defence Advanced Research Projects Agency (DARPA), an American military research outfit, launched a $6.3m research project, called Walrus, to develop airships capable of carrying 500 tonnes a distance of 12,000 nautical miles (22,200km) in less than a week. The aim was to find a way to deploy support infrastructure for troops quickly: unlike planes, airships require no runways, and unlike ships, they can reach landlocked countries, says Mr Hochstetler. DARPA said it wanted evidence “that earlier airship-era limitations will be overcome.” Then, earlier this year, it suddenly and mysteriously cancelled the project.

Studies commissioned by IPLOCA and BP, a British oil company, suggest that the Walrus project may have been too ambitious. The IPLOCA/BP studies concluded that the more modest ability to carry 75 tonnes travelling up to 800km was more feasible—and still very useful—says Philippe Lopez, one of the engineers who carried out the research at BMT Syntek, a firm based in Arlington, Virginia. Mr Lopez estimates that airships of this kind produced in reasonable numbers would cost around $50m each. But there is a catch: so far, nobody has ever built an airship so large. It is not just a question of building a bigger version of previous designs, since scaling can be a problem with airships, says Mr Hochstetler. Before building the *Hindenburg*, which was 245 metres long, the Luftschiffbau Zeppelin company first built more than 120 smaller airships, each slightly bigger than the last.

One difficulty, for example, is that if the bow is raised too high above the stern during a climb, the airship can tip into a vertical position. “Those things are so big that they have their own climate,” says Mr Lopez. Then there is the problem of parking. A heavy-lifting airship must be easy to tie down, even in cross winds. And when it delivers its payload, it needs to be weighted down with ballast to stop it shooting up into the air.

The solution to these problems may lie in hybrid airships that are aerodynamically shaped to generate part of their lift as a conventional wing does. Stationary, such airships would be heavier than air and so easier to park. Although this idea is several decades old, Lockheed Martin flew the first large-scale hybrid prototype only this year. The Walrus project also took this approach.

Before his death in 1917, Count von Zeppelin, inventor of the airship, was hailed as the greatest German of the 20th century. That turned out to be somewhat premature. But perhaps, with the help of high oil prices and some new technologies, the invention he pioneered will do better in the 21st.

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In the beginning was the word

Sep 21st 2006
From The Economist print edition

Computing: New systems that turn text into realistic speech could help the ill, direct lost drivers and make video games more absorbing

HOW would you like to make a celebrity say whatever you want? Earlier this year, customers of BT, Britain's incumbent telecoms operator, could do just that, and send the results to a friend. Tom Baker, a veteran British actor, did not have the slightest idea what he was saying—his voice was generated by a computer, which spliced sounds together to enable him to read out text messages keyed into mobile phones. This system and a similar one launched by Telstra, Australia's telecoms incumbent, provide a glimpse of the next generation of text-to-speech synthesis, the oft-neglected sibling of speech recognition.

Improvements in text-to-speech technology promise to expand the way synthetic voices are used. They could help people who have lost their voices speak again, captivate gamers in virtual worlds, direct lost drivers and enable dead celebrities to speak from beyond the grave.

Mr Baker spent 11 days in a recording studio, reading nearly 12,000 sentences, to generate all the sounds needed to enable his voice to render any message. The approach now used for car navigation similarly relies on pre-recording large chunks of sound, from single words to entire sentences. The larger the chunks, the more natural it sounds when several are joined together. Using smaller chunks—right down to individual phonetic units, or phonemes, such as “ar” or “eh”—requires less storage space. But when the phonemes are strung together, the result sounds robotic.

SVOX, a Swiss company, is trying to get around this by developing new algorithms to control the accentuation, phrasing, pitch and rhythm of synthesised speech. By analysing the context and meaning of the words being spoken it is possible subtly to control these parameters to produce a more natural result. This approach will also be much cheaper than the $100,000 it now costs to create a realistic synthesised voice, says Volker Peter Jantzen, SVOX's boss.

Jan van Santen, a researcher at the Oregon Health & Science University in Portland, Oregon, is trying to solve the same problem in a different way. The reason that phoneme-based speech synthesisers sound robotic, he says, is that they fail to take into account the way in which the pronunciation of each phoneme depends on its neighbours. Some systems try to get around this by stringing together groups of two or three phonemes, known as diphones and triphones. But Dr van Santen's approach is to model the way the pronunciation changes and to transform the phonemes accordingly. Ultimately, he hopes that a few dozen sentences will suffice to capture all the information needed to build a model that can then be used to mimic a real speaker.

A more minimalist approach is called “voice transformation”. Rather than piecing together recorded snippets of speech from a large database, this involves overlaying the snippets on to an existing but similar synthetic-voice model, just as a costume might be draped over a generic mannequin. The advantage of this approach is that it is much easier to build a transformation model than to build a synthesised voice from scratch. In one experiment, Jane Philbrick, an American artist, used Dr van Santen's software to get a virtual version of Jesse Helms, a retired American senator, to “read” a poem by Gertrude Stein.

Dr van Santen has more serious uses in mind. His team is working on prototype systems for medical applications that could be commercially available in the next three to four years, including a portable device for use by people suffering from slurred speech caused by Parkinson's disease. The technology could also be used by people suffering from motor-neurone disease, or even from “locked-in syndrome”, in which a catastrophic brain injury means that patients can communicate only by moving their eyes. In each case the idea is to use old recordings of people's voices to enable them to regain the power of real-time speech.

More realistic synthesised voices, without the need for large databases of recordings, would have many other uses. Smartphones could read out text messages, navigation systems could pronounce place names more accurately, and speech-based interfaces might become widespread. Sam Ruby, a researcher at IBM, speculates that the internet in five years' time might resemble “MapQuest or Google in your ear”.

Game developers are also interested in better speech synthesis, which would allow characters in games to speak in more responsive and lifelike ways, rather than relying on pre-cooked responses. That would make the virtual world more convincing and exciting, suggests Jon Payne, the head of development for 2K Games, a subsidiary of Take-Two Interactive. His programmers are already using facial sensors when they record actors for new games, to improve the lip-syncing. Yet the technology still relies on hours of recordings and looks clumsy. But soon, Mr Payne believes, players will be able to customise the voices of their in-game alter egos. Now you're talking.

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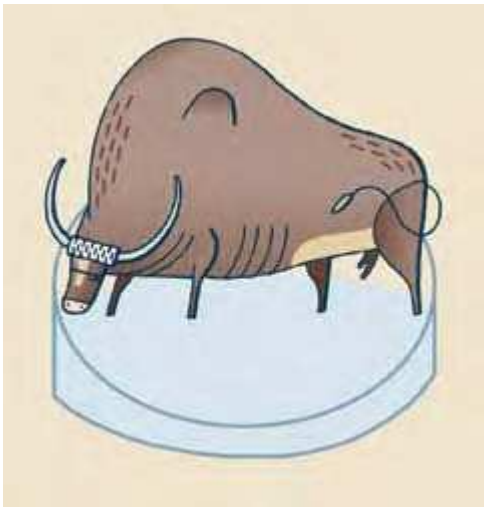
A meaty question

Sep 21st 2006
From The Economist print edition

Biotechnology: Meat grown in vats, rather than in the form of animals, could soon be on the menu. It might even be healthier and better for you



IF YOU have ever longed for a meat substitute that smelt and tasted like the real thing, but did not involve killing an animal, then your order could be ready soon. Researchers believe it will soon be possible to grow cultured meat in quantities large enough to offer the meat industry an alternative source of supply.

Growing muscle cells (the main component of meat) in a nutrient broth is easy. The difficulty is persuading those cells to form something that resembles real meat. Paul Kosnik, the head of engineering at a firm called Tissue Genesis, is hoping to do it by stretching the cells with mechanical anchors. This encourages them to form small bundles surrounded by connective tissue, an arrangement similar to real muscle.

Robert Dennis, a biomedical engineer at the University of North Carolina, believes the secret of growing healthy muscle tissue in a laboratory is to understand how it interacts with its surroundings. In nature, tissues exist as elements in a larger system and they depend on other tissues for their survival. Without appropriate stimuli from their neighbours they degenerate. Dr Dennis and his team have been working on these neighbourly interactions for the past three years and report some success in engineering two of the most important—those between muscles and tendons, and muscles and nerves.

At the Touro College School of Health Sciences in New York, Morris Benjaminson and his team are working on removing living tissue from fish, and then growing it in culture. This approach has the advantage that the tissue has a functioning system of blood vessels to deliver nutrients, so it should be possible to grow tissue cultures more than a millimetre thick—the current limit.

Henk Haagsman, a meat scientist at the University of Utrecht in the Netherlands, is trying to make minced pork from cultured stem cells with the backing of Stegeman, a sausage company. It could be used in sausages, burgers and sauces.

But why would anyone want to eat cultured meat, rather than something freshly slaughtered and just off the bone? One answer, to mix metaphors, is that it would allow vegetarians to have their meatloaf and eat it too. But the sausage-meat project suggests another reason: hygiene. As Ingrid Newkirk of PETA, an animal-rights group, puts it, “no one who considers what's in a meat hot dog could genuinely express any revulsion at eating a clean cloned meat product.”

Cultured meat could be grown in sterile conditions, avoiding *Salmonella*, *E. coli*, *Campylobacter* and other nasties. It could also be made healthier by adjusting its composition—introducing heart-friendly omega-3 fatty acids, for example. You could even take a cell from an endangered animal and, without threatening its extinction, make meat from it. Giant-panda steak, anyone?

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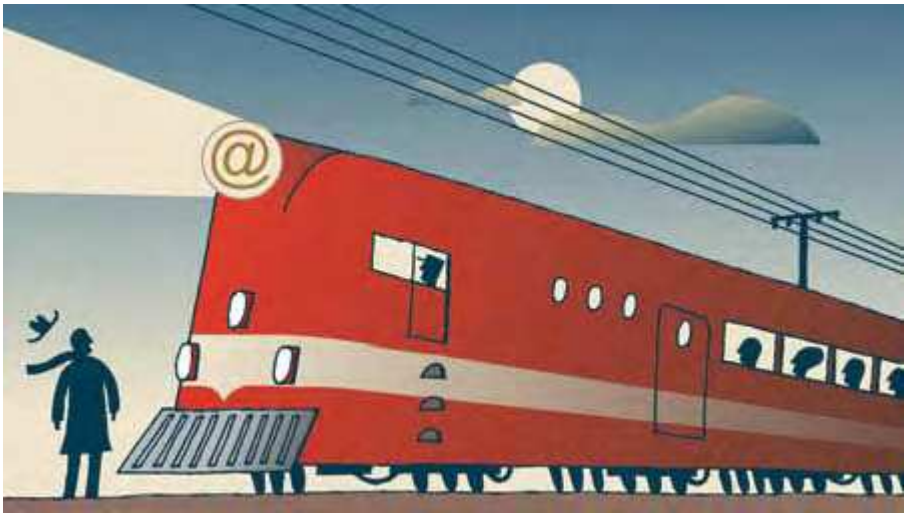
Getting the internet on track

Sep 21st 2006
From The Economist print edition



Communications: Internet access on aircraft has been slow to take off, but it could be coming soon to a railway carriage near you

FOUR hours on a train between Toronto and Ottawa was not going to stop Stuart McDonald from watching a World Cup football match in June. Barrelling across the Canadian countryside, he was able to catch the action over a wireless-internet connection supplied by VIA Rail, the train operator. “I did a blog post while I was in the middle of it,” boasts Mr McDonald, a professed early adopter of new technologies and the founder of Expedia.ca, a travel website.

He is not alone in getting online while riding the rails. Across North America and Europe train operators are testing wireless internet access or beginning large commercial deployment of the service. Today, only around a dozen rail lines and about 100 trains are equipped with broadband, but by the end of 2007 scores of lines and several hundred trains are due to offer the service.

Driving the market is a combination of passenger demand, the rail operators' own needs and improved technologies that make access on board feasible and cost-effective. Rail companies and access providers cite studies showing that 80% to 95% of their business passengers want internet service in transit; providing it gives the railways an edge over commuter flights (since in-flight internet access has been slow to get off the ground). It also helps the rail companies' own operations, by enabling such things as real-time video monitoring of passengers and voice services for staff.

But making the technology work is not easy. Trains race between dense cities and remote regions at high speeds, often ducking under tunnels along the way. It is hard to maintain a seamless service for users. As a result, today's services typically combine at least two technologies, most often third-generation (3G) mobile-phone networks and satellite links. But some lines have chosen to go entirely with WiMax, a wireless technology that is still in its infancy.

In Britain, for instance, trains managed by GNER use 3G for upstream access at relatively slow rates, and satellite on the downstream at two megabits per second (Mbps). On Southern Rail's Brighton-to-London route Nomad Digital, the service provider, teamed up with T-Mobile, a mobile operator, to use a WiMax system capable of 6Mbps in each direction, at least in ideal circumstances.

A big trial being carried out in California involving four companies is being closely watched by rail operators around the world, since it will provide a wealth of information about the effectiveness of different technologies. The Capitol Corridor line spans 170 miles (275km) from Sacramento, the state

capital, to San Jose, on the edge of Silicon Valley. The rail authority required the firms to provide at least 2.25Mbps downstream and 1.75Mbps upstream—which precludes today's 3G systems and most proposed ones, spelling bad news for traditional wireless operators. Moreover, a separate part of the bandwidth must be dedicated for the rail authority's own use.

The test network is being designed by a consortium led by ATC International (ATCI), which will use two-way satellite; Concourse Communications, an airport Wi-Fi and cellular service provider, which will test Wi-Fi, WiMax, and other technologies; EarthLink, which is also deploying municipal Wi-Fi networks in Philadelphia and San Francisco; and Nomad Digital. The companies will each cover short segments of the route, which passes through urban and rural areas, tunnels, cuttings and valleys. “As much as you're testing speed, you're testing cost effectiveness,” says Jim Allison, the rail authority's principal planner.

“The easy parts of the network are relatively cheap to do,” notes Nigel Wallbridge, the chairman of Nomad Digital. More than 80% of a typical line is simple—such as long, straight sections of track—but the remaining parts are much more cumbersome and costly to connect, he says. Still, these sorts of difficulties are normal. “Every train line, even in the same country, has a different topology,” explains Peter Kingsland, the boss of SCI Solutions, which provides wireless access on railways in Britain. “The trains are different, the demographics of the passengers are different, the volume of the passengers you're carrying are different. You have to treat every train operator in a kind of bespoke way,” he says.

According to a study carried out in 2004, Train-Phoenix, a Spanish rail operator, was able to receive 4Mbps downstream and send over 1Mbps upstream via satellite at speeds of up to 320kph for 75% to 85% of its routes from Madrid to Seville, and Madrid to Barcelona. “If it succeeded in that difficult terrain, some of these US trials are a piece of cake by comparison,” says Linda Hennessee of Wi-Fi America, part of ATCI's consortium.

In addition to streaming football matches to passengers, rail operators hope that wireless broadband will unleash all kinds of new services for both travellers and operators. For instance, in the wake of terrorist bombings in Madrid, London and Mumbai, train companies are considering installing video cameras on commuter trains. But efficiency is also on their minds. Operators today use a combination of low-tech radio systems to communicate. A wireless-data system would provide internet-based calls between staff and electronic ticket-checking—and might enable train equipment to diagnose and report problems automatically.

Many operators are interested in adding passenger-printed electronic tickets, much as airlines do. They imagine conductors with hand-held, Wi-Fi-enabled barcode scanners roaming the aisles. The Altamont Commuter Express in northern California, which has provided low-speed internet access for three years, is testing a scanner that works with pre-paid accounts. Steve Del Bosco of VIA Rail in Canada says the operator is considering providing feedback to its conductors on a barcode scanner's screen to improve customer loyalty.

Regardless of the technology that is deployed or the uses to which it is put, the internet-access providers say that one of the biggest adjustments is to get used to the idea of the 30-year lifespan of railway carriages. “Wireless technologies tend to last for five,” observes Mr Wallbridge.

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From hypertext to hypervideo

Sep 21st 2006
From The Economist print edition

Software: New technology that links together segments of online video delights viewers, vloggers and video-on-demand vendors

THE rise of the web transformed hypertext—which allows readers to click on a word in one document and be transported to another—from an obscure concept in computer science to a familiar, everyday technology. Might hypervideo—which lets viewers click on a moving image to call up a related clip—be on the verge of a similar transformation? This nascent development, also called video-hyperlinking, makes it easy to link together segments of online video in novel ways. Andreas Haugstrup Pedersen, a video blogger (or "vlogger") based in Aalborg, Denmark, who likes to video-hyperlink clips on his website, says the technology is a "vlogger's dream".

Hyperlinking video involves the use of "object-tracking" software to make filmed objects, such as cars, clickable as they move around. Viewers can then click on items of interest in a video to watch a related clip; after it has played, the original video resumes where it left off. To inform viewers that a video is hyperlinked, editors can add highlights to moving images, use beeps as audible cues, or display still images from hyperlinked videos next to the clip that is currently playing.

As the amount of video available online increases, so do the possibilities for linking clips together. Someone watching a documentary about the 20th century, for example, could click on the face of John F. Kennedy and be directed to newsreel footage of him. Further clicks might lead to the trailer for "Thirteen Days", a film about the Cuban missile crisis, to an interview with protagonist-actor Bruce Greenwood, and to a film promoting tourism in Hollywood. Just as hyperlinking disrupts the traditional structures of written text, the same is true of video.

But sometimes a hyperlinked structure makes more sense than a linear narrative. Researchers at the Technical University in Darmstadt, Germany, for example, have developed a system called ADIVI (a name derived from "add digital information to video"). Siemens, an engineering firm, plans to use it to enhance online-video technical manuals, so that technicians can click on a particular component or system to summon up more detailed video clips. The researchers call this "telescoping". In contrast, at viewmagazine.tv, a website that is experimenting with hypervideo, the term "drilling" is used to describe the ability to click on a talking head during a sound bite to summon an entire interview. Such disagreements over terminology emphasise just how new the technology is. Clickable areas in video clips, for example, are variously called tracked objects, hotspots, and tagged pixels.

Another area of uncertainty is the etiquette of linking to other people's clips. Hypervideo can either redirect viewers to another site and automatically start a clip on that site at a desired scene, or display video from elsewhere within their own websites. This practice, known as "hotlinking", is controversial, since the owner of the clip that is linked to may not be properly credited. So some sites discourage hotlinking. But Andrew Michael Baron, the producer of Rocketboom, a popular vlog based in New York, encourages hotlinking to his content. "We're saying, 'Hey, please do that'," he says. His only proviso is that hotlinkers must not use his footage to make money by selling advertising alongside it. Ravi Jain, another New York vlogger, jokes that this is a good time to be a copyright lawyer, since hypervideo is so new that its legal consequences are still unclear.

Then there is the matter of hypervideo's commercial potential. Advertisers are understandably excited by the idea. Eline Technologies, based in Vancouver, is doing brisk business selling hypervideo software called VideoClix to advertising agencies and companies including Apple, Disney and Sony. The software makes it possible to create online video clips that link to advertising or e-commerce sites, or provide more information about particular products. The result is far more powerful than a traditional television advert, says Babak Maghfourian of Eline.

Microsoft's adLab research centre in Beijing is working to incorporate hypervideo features into the

company's TV-over-broadband platform. And Tandberg Television, a Norwegian firm that sells video-on-demand systems, already sells a hypervideo system called AdPoint. It enables viewers to click on certain objects in television shows to see a promotional video and to “drill” into a commercial to see a longer version.

Tandberg is now working on a way to video-hyperlink film libraries. Viewers would be able to click on, say, a tank in a movie to call up a menu of films or military documentaries. Reggie Bradford of Tandberg says the result is compelling. “You get the emotional experience of television, with the Google experience of the internet,” he says. If all this sounds baffling and the terminology, etiquette and business models seem unclear, it is worth remembering that just a few years ago, that was true for hypertext, too.

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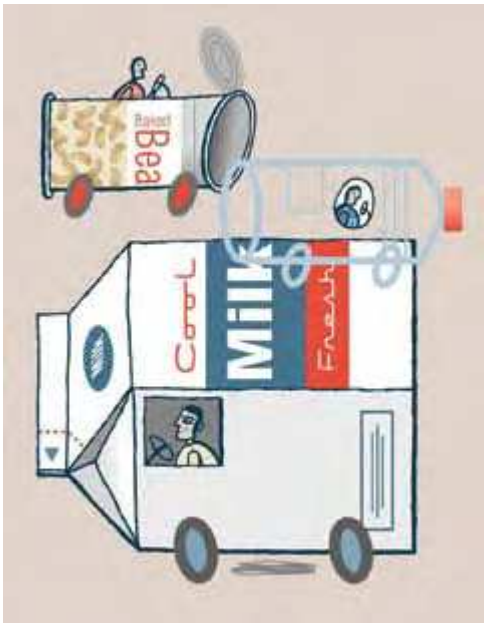
A rubbish business model

Sep 21st 2006
From The Economist print edition



Energy: The dream of turning worthless waste into valuable fuel is as potent as ever. But is the whole idea too good to be true?

WHERE there is muck, goes the old saying, there is brass. Several firms have taken that idea to heart and are seeking profitable ways to turn rubbish into fuel. Startech Environmental, for instance, based in Wilton, Connecticut, uses plasma conversion, superheating rubbish to break down its molecular bonds and create a “synthesis gas” which is then converted into ethanol or biodiesel. “We get 3.7 gallons of ethanol per 20lb tyre. That's serious output,” says Joseph Longo, Startech's chief executive.

The idea might sound far-fetched, but there are several ways to convert organic waste into various grades of fuel, at least in the laboratory. You can gasify rubbish by heating it and turning it into synthesis fuel, which is then fed into a reaction called the Fischer-Tropsch process. This technique for converting carbon monoxide and hydrogen into liquid hydrocarbons using a catalyst was invented in Germany in the 1920s and was used by the Nazis to convert coal into fuel during the second world war. An alternative method involves breaking down cellulose using various catalysts to accelerate the decomposition of organic plant residues into ethanol.

Household rubbish presents special problems, since it is an unpredictable mishmash of all sorts of stuff. Allen Hershkowitz, director of the solid-waste programme at the Natural Resources Defence Council (NRDC), says that no technology can take large amounts of mixed household waste and profitably convert it into ethanol or any other kind of fuel. He also notes that, although the country's landfills seem to be overflowing, America in fact produces only about 230m tonnes of municipal solid waste a year, compared with more than 2 billion tonnes of farm waste. The NRDC reports that much of the solid waste in landfills is made up of recyclables like plastic, or food waste that could be used as compost. Burning such things for fuel may not count as a gain for the environment.

By contrast, Startech's Mr Longo says he can produce fuel with almost no emissions and using only 10% of the resulting energy to power the process. Mr Longo is primarily a rubbish man—Startech was formed in the 1990s as a low-emission alternative to landfills and incinerators. Now he is hoping the ethanol craze will convince cities to strike deals with him.

Theoretically, a plant using Startech's process to vaporise 25 tonnes of tyres a day could create more

than 8,500 gallons of fuel (the number would be less if it processed other forms of waste). True, America alone consumes more than 20m gallons of fuel a day, but some lucky cities could run their fleets of dustcarts from such a plant with fuel to spare. However, all the 74-year-old Mr Longo has to show for his efforts so far is a small demonstration plant in Bristol, Connecticut. No backer has been prepared to provide the $6m for a Startech system that could convert 10 tonnes of waste a day.

At least Mr Longo has his demonstration plant, though. Not so Masada Resource Group, which in 2004 signed a contract with Middletown, New York, to build a $300m plant to convert waste to fuel. Although the scheme promised 90% efficiency using a vaguely defined “OxyNol” process, the firm has yet to lay the plant's foundations. In July Green Power, a start-up from Issaquah, Washington, showed off of a technology for converting waste to oil. The company says it can process any waste that is not glass, metal or radioactive and, using a catalyst, convert it to fuel, with an efficiency of 90%. But the firm's claims were met with scepticism, partly because of a past conviction of Michael Spitzauer, its chief executive, for fraud in his native Austria.

The one American company that has succeeded in building and running a commercial plant to convert waste to fuel is Changing World Technologies. Even then, the company says that, although it can convert solid waste to fuel, the process is not yet economical. “People's waste material is unpredictable,” says Brian Appel, who heads the company.

His firm's first plant processes waste from a turkey slaughterhouse and pig fats, using “thermal conversion”—heat and friction—to break down the chemical bonds, followed by heat and water to hydrolyse the material. This mainly yields liquid and solid fertiliser, but also makes gas that is used to power an industrial plant, but could be refined into biodiesel. One problem is that it costs Changing World about $80 a barrel to make the fuel. Another is that the company has had to spend heavily to reduce the smell from the plant, which was briefly shut down because of it.

With oil prices high, Mr Appel and his fellow entrepreneurs must hope that their timing is good. Nancy Floyd, co-founder and managing director of Nth Power, a pioneering energy investor, says that her firm is close to investing in a company that converts waste to ethanol—though she declined to name it. Although the industry has a record of failure, she says, “there is new technology now, and we are seeing it applied.” So although profits are hard to come by, optimism is in plentiful supply.

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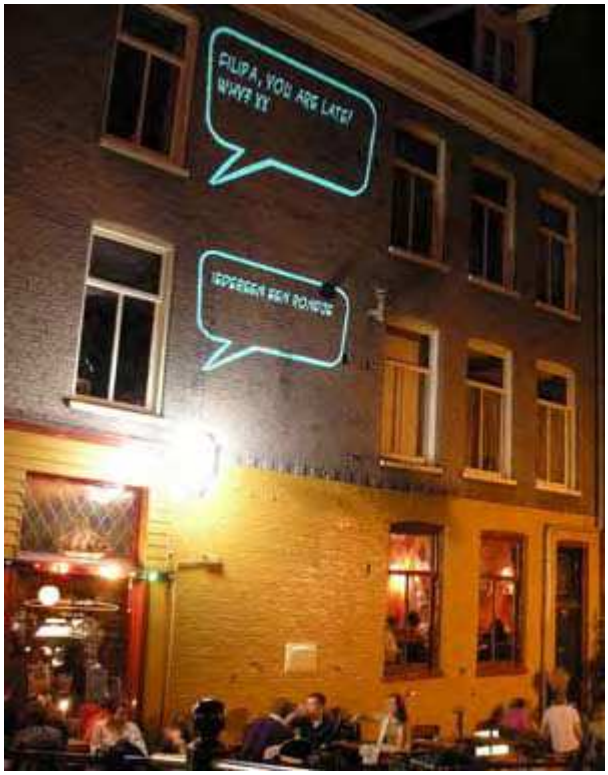
The writing on the wall

Sep 21st 2006
From The Economist print edition

Technology and society: Is the mobile phone mightier than the spray can? New "digital graffiti" systems are being put to a variety of uses



TXTual Healing in action

AS IF text messaging were not already ubiquitous—over a billion messages a day flit between the world's 2 billion mobile phones—it is now moving from the private sphere into the public one. New technologies allow text messages to be displayed on the sides of buildings, on public screens in cafés or on vast digital displays at sporting events and festivals. Such "digital graffiti" can be used in various ways: to capture the mood of a gathering, boost a brand, or to spark public dialogue. Mobile devices are in a unique position to enable new forms of communication within groups and crowds, since almost everyone in the developed world now carries one, notes Linda Barrabee, an analyst at Yankee Group in Boston. "We are still in an early stage, but there is promise," she says.

The earliest examples of digital graffiti appeared in Europe, where text messaging took off years ago, unlike in America where it has only recently become popular. In 2001, for example, at the Speaker's Corner building in Huddersfield, England, a tickertape-like display showed the results of a text-message poetry contest. Sponsored by the Arts Council England, the contest elicited some 2,000 poems, 100 of which were displayed on the constantly scrolling screen.

The latest digital-graffiti systems are rather more elaborate, thanks to the efforts of companies such as LocaModa, a start-up based in Somerville, Massachusetts. It has installed eight "Wiffiti" screens (a name derived from "wireless graffiti"—it has no relation to Wi-Fi networking) in coffee-shops in several American cities, sometimes with the support of sponsors. Between double espressos, patrons send text messages to the 50-inch screens. What they write is also mirrored on the web, so that visitors to wiffiti.com can remotely observe what's going on at, say, the Hurricane Café in Seattle, the Filter Coffee Lounge in Chicago or Half Fast Subs in Boulder, Colorado.

When Jason Hetherington, a 26-year-old exam instructor, was working in Dubai for six months, he often visited wiffiti.com to see what was up at Somerville's Someday Café in Somerville, Massachusetts, his old haunt. “It was a great way to get a taste of what was going on back home,” he says. Stephen Randall, the boss of LocaModa and one of the founders of Symbian, a company that makes software for smartphones, likens the result to a location-based blog. He plans to have sponsored screens capturing “the word on the street” in 10,000 places by 2009.

Some of the messages sent to the screens are remarkably banal, but things occasionally get spicy. In March one woman received a marriage proposal via the Wiffiti screen at Toscanini's café in Cambridge, Massachusetts. What is more, she accepted via Wiffiti—after a mere 29 minutes of contemplation. Although it might seem to make more sense to talk to, rather than text, the person sipping coffee nearby, “people are looking for a way to break the ice,” says Tamara Mendelsohn of Forrester, a consultancy. Furthermore, systems like Wiffiti are “noncommittal—you're not going to face rejection,” she adds.

For others, public texting is a chance to cause a stir. Paul Notzold, a designer based in Brooklyn, has rigged up a system to project blank speech bubbles on to public walls. He generally sets up after sunset for better visibility and passes out leaflets explaining how to send text into the speech bubbles. “There is an element of empowerment in being able to post a message,” says Mr Notzold, who just finished a master's degree in design and technology at Parsons The New School for Design in New York. He has done a dozen or so “projections” on to buildings: in Brooklyn, along the canals in Amsterdam, in a public square in Hamburg and even on to the Millennium Museum in Beijing. “The police were around, and when they came over I thought they were going to shut it down,” says Mr Notzold. In fact, they just wanted to know the phone number to send messages to.

As the photos on his TXTual Healing website reveal, most messages (“Where's my other sock?”) lack lyricism. But Mr Notzold expects gravitas will come with time. “The more I can get out there and do this, the more people are going to text politically and socially charged material,” he suggests. His text-message graffiti system gives people a way to stay engaged, he believes, “instead of just plugging into games or music on the phone, and disconnecting from society.”

Digital graffiti can have commercial as well as political uses. This summer Britvic, a British soft-drinks company, ran a “Court on Camera” promotion at the Wimbledon tennis tournament. Consumers who were queuing for tickets were encouraged to send photos from their phones to a giant screen adorned with branding for its Robinsons line of soft drinks. “It became a form of co-branding, where the consumers stamped their identity on the event,” says Daniel Conti, Britvic's new-media manager. VIP tickets to the centre court were awarded to the senders of the best pictures.

But text-based campaigns are more widespread. Last year Nike, a maker of sports gear, used text messaging to allow people to conjure up images of customised shoes on a giant screen in New York's Times Square. Anyone who did so received a text message in return that contained the address of a website where the design could be confirmed and the shoes ordered. And in July this year Procter & Gamble invited women to text their secrets to Times Square's giant screens, as part of a promotion for its Secret deodorant. (“I cut my sister's hair when she was younger and told my parents that she did it herself,” ran a typical message.) The messages were also displayed on the secret.com website. “Brand awareness has increased dramatically,” says P&G.

Similarly, MOVO Mobile, based in Sarasota, Florida, ran a spring-break promotion for Gillette, a maker of grooming products, in which college kids could send flirty messages to a large screen at a night-club. Sending a message, of course, opens the door to follow-up messages from the event's sponsor.

Digital graffiti even have their religious uses. Teen Mania Ministries, an evangelical Christian group based in Garden Valley, Texas, sets up huge screens at its “Battle Cry” events, which are attended by tens of thousands of teenagers. Those attending can text personal messages to the screens, or use them to ask the preachers questions. The idea is to train teenagers to use technology “for a higher purpose,” says Tocquigny, the advertising agency involved.

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Gaming's next episode?

Sep 21st 2006
From The Economist print edition

Consumer electronics: The idea of "episodic" games, which can be bought and played in small chunks, has pros and cons

IT IS an industry that likes to compare itself to Hollywood. Video games can indeed be epic, cinematic experiences; and they are often based on films, such as "Star Wars" and "Lord of the Rings". But some in the industry take a different view. Games, they say, ought to be more like television programmes, not films: delivered in small, short, regular chunks. This approach, called "episodic" gaming, could have benefits for both players and developers of games alike, says Gabe Newell, the president and co-founder of Valve Software. His firm is one of the best-known proponents of episodic gaming, having chosen to release the sequel to "Half-Life 2", a popular action game, in the form of a trilogy of shorter episodes.

"Smaller chunks of content should have greater value for consumers," he says. That is because most gamers have a pile of unfinished games languishing next to their consoles. Modern video games take several years and perhaps $10m to create, and typically provide a storyline that takes an average player around 50 hours to complete. But, Mr Newell points out, less than 20% of players of "Halo 2", a popular shoot-'em-up for Microsoft's Xbox console, have finished the game. "So over 80% of customers are paying developers to create content they'll never consume," he says.

That is why "Half-Life 2: Episode One", which came out in June this year, is both shorter and cheaper than a typical game. It costs $20, rather than the usual $50-60, and provides around five hours of gameplay on average. This changes the gaming experience: the episode can be played in a single stretch.

Some in the industry believe that episodic games could have broader appeal than existing games, which can put off players who are unwilling to spend weeks finishing them. Gerhard Florin of Electronic Arts, the world's biggest games publisher, imagines a distribution model that combines disks with downloads. The initial game would be sold on disk for $20 or $25, he suggests, and would be shorter than today's games. Anyone who finished it could then download more levels online—since the latest games consoles, like PCs, can connect to the internet. "If you want more, you can have as much as you can eat, using micropayments for the next levels," he says. "That way, heavy gamers go further and pay more."

One company that is doing something along these lines is Bethesda Softworks, the maker of "The Elder Scrolls IV: Oblivion", a popular role-playing game on the PC and the Xbox 360. Although the game is a full-price title and provides hundreds of hours of gameplay, Bethesda has also released several add-ons, which can be bought and downloaded via Microsoft's Xbox Live Marketplace. Several of these add-ons are new missions that take a few hours to complete. "They keep players interested, and it helps to further extend the life of the game," says Pete Hines of Bethesda.

"Episode One" was well received, and the next episode is due next year. That highlights a further advantage of episodic gaming: episodes can be developed and released more quickly than full-scale games. "Half-Life 2", which came out in 2004, took six years to develop, whereas new episodes can be put together in a year or so. "The traditional rule of thumb is that twice as much content takes four times as much resources to develop," says Mr Newell. So for maximum productivity, he says, "you want to make your chunks of development as small as possible." Internally, he says, Valve measures its productivity in terms of "man-years per player-minute". So far, he says, developing episodic games seems to be about four times more productive than developing traditional games.

Yet another benefit of the episodic approach is that it could encourage more innovation, says Mr Newell. As the cost of developing games increases, there is a tendency to play it safe. “If you have a $20m budget, you aren't going to try a new game design or intellectual property,” he says. Instead, it is safer to go for a movie tie-in, since the game can then piggyback on the film's marketing campaign. “This is a recipe for creative stagnation,” he says. “But by moving to smaller and more regular releases of content, we take risk out of the size and budget and can put that risk into other areas of the project.” The same, after all, is true of television: unlike in film, writers can experiment with unusual scenarios within a single episode, as in the musical episode of “Buffy the Vampire Slayer” or the live episodes of “ER”.

Telling a different story

It sounds almost too good to be true. Episodic games, it seems, will be cheaper for both games companies and gamers, will have wider appeal and will be more innovative. But not everybody agrees. Jason Kraft, an analyst at Susquehanna International Group, is sceptical. The real motive behind episodic gaming, he suggests, is to lock in players and generate new revenue.

Downloadable add-ons for games such as “Oblivion”, notes Mr Kraft, generate extra revenue at very high margins, since internet distribution costs next to nothing. “The consumer pays these incremental fees because they are sucked into the game,” he says. Some “Oblivion” fans grumble that to own a complete version of the game, it is now necessary to buy all the add-ons, too. But Mr Hines notes that the add-ons are not compulsory.

Mr Kraft is also dubious about the idea that smaller, shorter games can be developed more cheaply. Much of the initial expense of creating a game involves the creation of characters and artwork, and the software “engine” that brings the game world to life. It is not at all clear that it costs half as much to create a game of half the size, since these start-up costs are so significant. Another criticism of episodic games is that “episode” could just prove to be a euphemism for “sequel”. And many people feel that gaming, like the film business, is too dependent on sequels already. So it is unclear whether episodic gaming is a promising new business model or a fad with only limited appeal. As they say on television, stay tuned.

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Visions of ecopolis

Sep 21st 2006
From The Economist print edition

Imaginechina

Technology and the environment: China has ambitious plans to build a model "eco-city" near Shanghai. How green will it be?

ON AN island at the mouth of China's Yangzi River, plans are afoot to build the city of the future. The first residents will move in within five years. The city will be self-sufficient in energy and water and will generate almost no carbon emissions. Petrol and diesel vehicles will be banned in favour of solar-powered boats and fuel-cell-driven buses. The developers of this "eco-city", called Dongtan, hope that it will come to be seen as a model for the rest of the world: London's mayor, for one, is already inspired by it. Will it work?

The island, Chongming, is a semi-rural county on the northern boundary of Shanghai, China's most populous and crowded city, with a population of more than 9.3m in its main urban area. Shanghai's rapid economic growth in recent years has made land in the city extremely expensive. Chongming, relatively poor and undeveloped compared with the neighbouring city, has long looked ripe for development into yet another expanse of factories and commuter towns. Instead, the city's planners—with strong backing from China's political leadership—have decided to turn it into a model of what Shanghai is not. Chongming is to be an eco-friendly island. At its eastern end, on an expanse of reclaimed wetland that is today home to a scattering of farmers and fishermen, the eco-city of Dongtan will rise from the paddy fields, crab ponds and vegetable plots to become home to tens—eventually hundreds—of thousands of people.

Chongming likes to call itself China's third-largest island, though many would no doubt object to that description in independent-minded Taiwan (supposedly the largest island, with the offshore province of Hainan as number two). It is a strip of alluvial silt about 80km (50 miles) long and 17km wide that is home to some 650,000 people. The plan is to turn some of this farmland into forest and to make all agriculture organic. Chongming also hopes to attract low-polluting, high-tech industries. But much of its economy will be generated by "green" tourism. Chongming's forests—all planted, because there is no natural woodland—will provide a holiday refuge for Shanghai's residents, who have few parks or other open spaces to enjoy. There are also plans for a theme park.

Then there is the wetland. Chongming's fringe of tidal reed-covered mudflats—especially close to Dongtan—are a haven for birds, including the rare black-faced spoonbill, as they migrate between Australia and Siberia. Last year the central government put the wetland under state protection, although Yu Weidong, an ornithologist at Shanghai Normal University, dryly observes that it took two decades of lobbying to achieve this. Dongtan's planners say they will not only preserve the mudflats, but also create a wildlife park some 4km wide as a buffer along the edge of the wetland—"a placenta where life is to be gestated", according to their brochure. Only one-fifth of Dongtan's 86km^2 area is to be urbanised.

It sounds like just the kind of greenness so urgently needed in the rest of China. The country's cities are choked by the exhaust fumes from a burgeoning number of cars, shrouded with dust from countless building sites and soaked with rain turned acidic from coal burnt for power and heating. It is beguiling to

imagine that Chongming might become a model for city planners elsewhere in China as they struggle with the fastest urban growth in the country's history. By some estimates, China's urban areas, already home to around 560m people, may well have to accommodate another 300m people by 2020.

The central government, worried about the country's growing reliance on imported fuel and anxious to dispel its image as a super-polluter in the making, has begun to talk enthusiastically about the need for “green GDP” growth. There is hardly a local government that does not talk these days about plans for an eco-village, town or even city. But what they mean by this is vague. The central government fears that issuing clearer instructions could threaten growth and social stability. Officials bicker about how to quantify green GDP. Chongming, with little manufacturing industry that might resent the cost of going green, is seen as a low-risk place to experiment.

Ken Livingstone, London's mayor, is one Chongming enthusiast. During a trip to Shanghai in April, he described the Dongtan project as “breathtaking in scale and ambition” and a potential “beacon to the world on how to achieve a low-carbon future”. Mr Livingstone has plans to build a zero-carbon suburb in London, in conjunction with Arup, a British engineering firm that is helping to design Dongtan. The project, in an old industrial area in east London, would be much smaller than Dongtan. But Mr Livingstone has said his plan would show that it is “affordable and achievable to make all major new developments low-carbon.”

Arup is excited, too. Rarely does the chance arise to design a city from scratch. The rapid growth of Chinese cities in recent years has been a bonanza for foreign architects and urban designers. Local governments have been lavishing huge sums of money on overseas expertise—much to the annoyance of home-grown designers—in the hope of making their cities look modern. Many of Beijing's most prestigious new buildings are foreign creations. Shanghai's Pudong district, which until the early 1990s was mostly farmland and a few factories, now boasts a collection of skyscrapers designed by some of the world's most famous architects—not to mention the world's first commercially operating magnetic-levitation train, supplied by Germany.

Arup's contract, signed last August, is with Shanghai Industrial Investment Corporation (SIIC), a property company controlled by the Shanghai government and listed in Hong Kong that was given the newly reclaimed Dongtan site in 1998. The deal became a showpiece of environmental co-operation between Britain and China during a visit to London by Hu Jintao, China's president, last November. In the presence of Mr Hu and Tony Blair, Britain's prime minister, the two companies signed another deal pledging to co-operate on any similar future projects by SIIC. There is also talk of building further eco-cities after Dongtan.

Soul of a new metropolis

Arup's plan for Dongtan is for a city made up of three “villages”. The first phase, due to be completed by 2010, will accommodate some 25,000 people, the firm says, and the total population will increase to half a million by 2040. According to the company, the city will combine elements of traditional Chinese design with the latest green technologies. Its energy will come from renewable sources such as wind turbines and bio-fuels made from agricultural waste. Most of the city's rubbish will be recycled. There will be no landfill. Human sewage will be processed and used for irrigation. Food will be produced without using agricultural chemicals. And “green building” technologies will reduce the amount of energy needed to heat and cool buildings by 70%.

Unlike the newly developed areas around many of China's fast-expanding cities, Dongtan will be compact, making it easy to cycle or walk around. Public transport, Arup says, will include solar-powered water taxis that will ply Dongtan's canals, and buses powered by hydrogen fuel cells, which combine hydrogen with oxygen to generate electricity and water, but no harmful emissions. The city government is expected to provide the buses as part of a scheme to have 1,000 fuel-cell vehicles in the city by 2010 and 10,000 by 2012. Visitors, says a news release, “will be encouraged to park their cars outside the city and use public transport” while in Dongtan. No petrol or diesel vehicles will be allowed in the city. And the hope is that there will be visitors aplenty. The eco-city is to be partly a tourist attraction.

Yet herein lies one potential flaw. Chongming is at present a couple of hours' journey from central Shanghai by taxi and ferry. This, and its lack of five-star amenities, acts today as a deterrent to the tourist hordes. But once a new expressway, a 9km tunnel and several bridges have been built to link downtown Shanghai with the province of Jiangsu to the north, Chongming will no longer be a remote backwater. The plan is to complete this new transport artery by 2010, when Shanghai will host the World Expo—an event regarded as the city's coming-out party—rather as the 2008 Olympic Games will be for Beijing. Hence the timing of Dongtan's first phase. SIIC wants to have something to show off when Shanghai is flooded with tourists, politicians and businesspeople. Visitors will be encouraged to use Dongtan's eco-friendly public transport. But their emissions in getting there, swollen by the growing numbers as travel gets easier and other planned attractions become available, could offset the city's eco-friendly features.

Then there is the risk that Dongtan will become little more than an expensive idyll where Shanghai's wealthy can enjoy their weekends, or a dormitory town from which residents will commute to Shanghai's city centre, polluting as they go. After all, cynics might say, SIIC is sitting on a potential goldmine that readily lends itself to just such a development. Since it acquired the land, there has been little that the company could do with it to turn a profit. In the absence of better transport links—it is 40 minutes by car to Dongtan after arriving on Chongming by boat—the land has been all but worthless. But with the infrastructure now being built this will dramatically change.

SIIC insists, however, that Dongtan will grow in accordance with the demands of its own local economy and will not be a getaway for Shanghai's rich. Yet initially, at least, the city will depend on providing leisure activities for visitors from the mainland. In other words, it will be a theme-park economy—hardly one that could serve as model across China. Later, Dongtan hopes to attract research laboratories, technology companies and call-centres, and to develop commercial-exhibition services. But such activities are possible to a large extent because Dongtan is located on the doorstep of Shanghai, one of China's wealthiest cities. So even if Dongtan becomes a showcase for technologies and urban design that help to protect the environment, it is not clear how affordable or relevant they would be elsewhere in China.

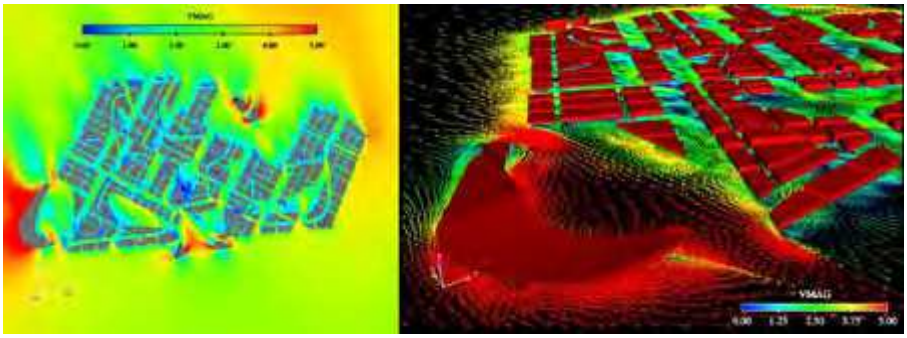
How green is my city?

Even Chongming's own government, notwithstanding its eco-pretensions, does not appear anxious to push the rest of the island to follow the Dongtan model. Hu Jun, a deputy county chief, says that one solar heating-panel costs the equivalent of a year's income for a peasant. The cost of electricity from wind turbines, he points out, is four times greater than it is from coal-fired plants. As a result, he says, the low income of Chongming's residents “can't support this kind of eco-technology”. Nonetheless, Chongming's plans are ambitious by China's standards. By 2020, it plans to source 30% of its energy from renewables, up from less than 1% at present (solar-powered street lighting is ostentatiously installed near the ferry terminals). The country as a whole is aiming for 15% renewable energy by then, up from 7% now, most of it hydropower.

Chongming officials readily proclaim that environmentally friendly development requires a population that sees the benefits and understands what is required. But one of the main ways to foster such an awareness in Western societies, a vigorous civil society, is lacking in China. The country is only barely tolerant of non-governmental organisations, and fears that environmental pressure groups could provide cover for political activism against the Communist Party itself. A wetland expert in Shanghai asks that critical remarks about Chongming's plans not be attributed to him (he frets that a profusion of wind turbines, and an increase in the island's population, could threaten Chongming's birds). Even the Beijing office of WWF, an international environmental group, declined to discuss Dongtan. The local media say nothing that might embarrass the city authorities.

A big part of the environmental problem arising from China's urban growth is that local governments and companies they associate with have little to restrain them as they rush to make money. This has encouraged the rapid outward expansion of cities, rather than the more efficient use of existing space. In name at least, rural land is collectively owned by village residents. But since unelected party officials still control most villages, it is easy for local governments to seize land and sell it to developers while giving peasants little compensation.

Dongtan, as reclaimed land with no permanent population before SIIC took it over, is not tainted with such a history. And most Chongming islanders, long isolated from Shanghai's boom, doubtless welcome the government's decision to make the island's development a priority. But Shanghai's growth, and that of many other Chinese cities, has happened with little reference to public sentiment. Even as Shanghai's government plans a green haven on Chongming, it has been relocating tens of thousands of people from the city centre to make way for World Expo projects. The demand for cars is soaring as growing numbers are pushed into distant suburbs—a widespread phenomenon across China with cities rushing to build modern-looking business districts and erase Maoist-era housing. So, too, is the demand for better roads, resulting in a frenzy of construction across the country.



According to Peter Head of Arup, the aim at Dongtan is to achieve an “ecological footprint” of two or less, meaning that two hectares of land would on average accommodate the consumption and waste of each person. Measuring ecological footprints is an imprecise and controversial science, but Mr Head says his target would bring Dongtan to roughly the level that would be required globally for mankind to sustain itself indefinitely. By comparison, he says, London has a footprint of 5.8. By Mr Head's current measurements, Dongtan would come out at 2.5 and he admits that lowering this to two will be hard. The obstacles include the effects of construction, as well as residents' expected consumption of meat (which raises the footprint because animals need grain). “There is no way you can expect Dongtan people not to eat meat,” he says.

Follow the footprints

A pioneer of the ecological footprint, William Rees of the University of British Columbia in Canada, has mixed views of Dongtan. It is, he says, “hardly a truly sustainable option” given that it is a new city occupying what is mostly agricultural land near a large ecologically significant wetland. He says that it is being designed to attract wealthy buyers whose way of life will be characterised by “high levels of personal consumption and large per-capita eco-footprints”. But it could be worse. It is at least less bad, he concedes, than greenfield cities for the rich based on standard urban designs and architecture.

China's rapid development means it is most in need of a new approach to eco-friendly urban design, yet least able to embrace it. Despite the noble aims of its planners, Dongtan seems more likely to promote the development of other eco-cities outside China than within it. But as mankind becomes an urban species—around half of the world's population is now city-dwellers—the search for ways to reduce the environmental impact of cities has to start somewhere. Dongtan is as good a place as any.

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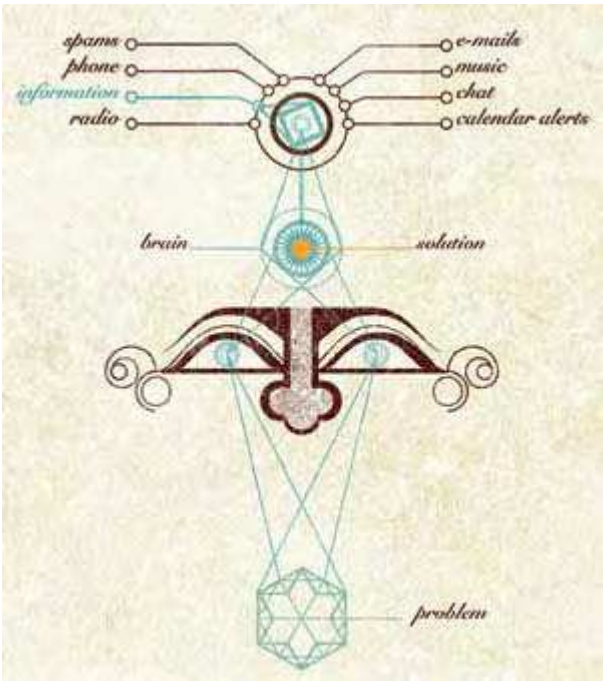
Computers that read your mind

Sep 21st 2006
From The Economist print edition

Software: Systems that work out what users are doing, and then respond accordingly, could help people to work more effectively



DO YOU use the internet while watching television, listen to music while working at your computer, or read e-mail while talking on the phone? According to Linda Stone, a former Microsoft and Apple executive, this is the era of “continuous partial attention”. People flit constantly between technologies, yet never devote their undivided attention to any of them, she observes. The e-mails, instant messages, text messages, calendar alerts, telephone calls and the occasional, old-fashioned face-to-face conversation are all competing for their share of your awareness. Part of the problem is that today's technologies lack the intelligence to determine when to interrupt people—and, more importantly, when to leave them be.

Now a new class of technologies is being designed to help users to regain their focus and enjoy more lucidity and concentration. The new field is known as “augmented cognition”, and it employs sensors to infer the mental state of someone using a device. Rather than trying to read the user's mind directly—the approach taken in a different field, known as brain-computer interfaces (BCI)—augmented cognition has a subtly but crucially different aim. BCI devices are used to control things in the physical world, such as a cursor on a screen, a wheelchair or even a prosthetic limb. Augmented cognition, in contrast, focuses on deducing a cognitive state with the aim of somehow enhancing it.

So when someone is overwhelmed with information, an augmented cognition system would try to help him cope by diverting some of it. Naturally enough, augmented cognition has captured the imagination of the armed forces—the Pentagon's Defence Advanced Research Projects Agency (DARPA) is one of its biggest backers. That is because today's military personnel are bombarded not just by the enemy, but also by information, says Dylan Schmorrow, previously the founder and programme manager of DARPA's AugCog programme. (Dr Schmorrow, who now works at the Office of Naval Research in Arlington, Virginia, will also chair an international conference on augmented cognition which takes place next month in San Francisco.)

Augmented cognition should be able to help soldiers and fighter pilots make sense of high volumes of

data and exploit them, rather than being swamped by them, says Dr Schmorrow. One idea, dubbed the CogPit, is to work on a smart cockpit for fighter aircraft. The system monitors the pilot's use of conventional controls but also takes readings from electroencephalogram (EEG) sensors built into a helmet to measure brain activity. If the pilot is targeting the enemy and the aircraft detects a threat, such as a surface-to-air missile, the CogPit system senses when to alert and possibly distract him with a verbal or onscreen warning.

From changes in frequency of the pilot's brain waves and contextual information—such as how he is interacting with the fighter's controls—the system can recognise when the pilot's task is too delicate to be interrupted. If necessary, the system can even deploy countermeasures automatically, depending upon how serious the threat is, says Blair Dickson of QinetiQ, Britain's privatised military-research agency, which has been working on part of the CogPit project.

As well as determining how to treat new information, the system can also try to reduce stress on the pilot by filtering out non-essential information, says Dr Schmorrow. If the EEG and pilot's behaviour indicate that he is becoming overwhelmed, it can temporarily “grey out” less vital onscreen information and reduce incoming radio communications. This should free the pilot to concentrate on the information that matters most.

“A lot of people still think it is science fiction,” says Dr Schmorrow, “but there have been some profound advances in the last six months.” In an assessment of the system, six F-16 pilots were recently asked to carry out a mission in a CogPit simulator in which they faced a series of threats, including heat-seeking surface-to-air missiles. Although the sample was too small to be statistically significant, the missions that used the CogPit's adaptive-autopilot feature suffered less damage than those that did not, says Dr Dickson.

Besides recording EEGs, the DARPA programme has also measured such things as heart rate, sweat, pupil dilation and even posture. “The more involved you get into a task, the more you lean into the desk,” says David Kobus of Pacific Science and Engineering in San Diego, California, who helped to set up DARPA's AugCog programme. Such information can help reveal the mental state of an air-traffic controller, for example.

Body talk

Even at noisy and chaotic times, such as during a military exercise, augmented cognition has worked surprisingly well, says Dr Schmorrow. In trials where teams of four soldiers had to rescue a hostage, head-up displays relayed information visually and vibrotactile vests gave soldiers navigational information about where to go during an ambush. Given how unreliable some sensors can be, particularly EEG sensors, the results were encouraging, says Dr Schmorrow. And in addition to helping individual soldiers, the system can also benefit those in the command centre, by indicating when a particular unit has its hands full or is too tired to move elsewhere.

The armed forces are not alone in wanting to get more out of people. Augmented cognition could also find its way into work, too. Microsoft has been devising tools to improve productivity by working out what people are doing. This is just what the company's infamous paperclip was supposed to do, popping up on the screen and offering advice whenever its Bayesian engine statistically determined that the user needed assistance. Yet the clip soon became an irritation, distracting the user and reducing productivity. (Part of the problem was that Microsoft was so proud of the feature that it made the clip more prominent.)

Augmented cognition promises to be a different story, insists Eric Horvitz, a senior researcher at Microsoft Research in Redmond, Washington, and president of the American Association for Artificial Intelligence. The emphasis now is on filtering information before it reaches the user, he says. By controlling the flow of information, it should be possible to increase the amount of information people can absorb without overloading them, says Dr Horvitz.

The trick in getting this right lies in the ability to recognise cognitive limitations and biases. And unlike BCI interfaces and many of the military applications, this does not call for brain sensors, he says. Plenty of measures can tell you something about the user's state of mind: keystrokes, how many windows are open and their content, whether the user is scrolling, the time of day, the contents of a desktop calendar—even background noises from a microphone and visual information from a camera.

By analysing someone's behaviour during a training period, a program called Busy Body can learn to tell what someone is doing and whether to interrupt him. The system can distinguish between types of behaviour and incoming information, says Dr Horvitz. In effect, it gauges how busy the user is and the urgency of the new data, whether in the form of e-mails, telephone calls or text messages. “We weigh the cost of interruption against the benefits of seeing time-critical information,” says Dr Horvitz.

During a video-conference call, for example, the system might decide not to notify you that a piece of spam had arrived in your mailbox. Similarly, it should know that you do not want to be disturbed by a message from a friend just before the deadline for a report—but to put through a call from a colleague who is working on the same project.

Dr Horvitz's team has also looked at how “models of interruption”, as he calls them, can filter out information when people are driving. One program, called Short Stop, which runs on a smartphone, can predict when a driver is likely to stop and how long that stop will last. The model is based on logs of more than 18,000 miles (29,000km) covered in 2,500 trips made by Microsoft volunteers.

When a call comes in, the program looks at the position, speed, time of day and even the weather to calculate the chances that the driver will stop soon. If a stop is likely, the call is answered and put on hold until the car stops. A message informs the caller that the driver is busy, but may answer soon. If the driver is likely to motor on, the call is diverted to voicemail.

The system is surprisingly accurate, says Dr Horvitz. It can predict whether a person will stop for just five seconds, 35 seconds, or more than a minute, with an accuracy of about 80%. And rather than having to be trained by each user the system appears to generalise well. Given the amount of information being thrown at motorists, such a system could help take some of the stress out of driving.

Mind games

When playing video games, a little stress can be a good thing. There is a lot of interest in using augmented cognition in gaming, says Dr Schmorrow, because by sensing a gamer's cognitive state you can make it more fun. In particular, the technique can stop players getting bored or lost, says John Laird, the director of the Artificial Intelligence Laboratory at the University of Michigan in Ann Arbor. In a haunted-house role-playing game, Dr Laird has used augmented cognition to infer mental states and determine whether the player needs help to get back on track and advance the game's story.

Although Dr Laird is basing this purely on the player's activity and behaviour within the game world, others are using physiological sensors, too. Alan Dix, an expert in human and computer interaction at Lancaster University in England, predicts that within a few years game consoles will come with a range of sensors designed to measure a player's state of alertness. EmSense, a company based in Monterey, California, is already pursuing this approach. It sells a lightweight headset that monitors a player's brainwaves, heart rate and breathing. It can also tell whether the wearer is moving.

Working with his colleague Kiel Gilleade, Dr Dix linked a heart monitor to a first-person shooter—a game in which the player views the world along the barrel of a gun. “The idea was to see if you can change the gameplay to keep people at an optimal level of arousal,” says Dr Dix. As the player's heart rate drops, the game becomes harder; but if he becomes too excited, it will start to ease off. “We don't want to kill them,” says Dr Dix. The result is a more compelling game. On the battlefield, in the office, in the car and even at home, there are good reasons to teach computers to read their users' minds.

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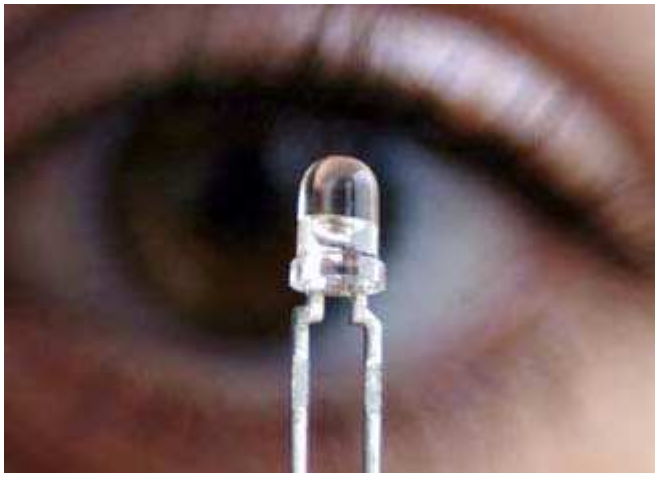
An even brighter idea

Sep 21st 2006
From The Economist print edition

Lighting technology: The light bulb is synonymous with invention. But, as this case history explains, it may lose out to the light-emitting diode, which is better in many ways

Corbis



HOW long does it take to change a light bulb? According to iSuppli, a market-research company that specialises in technology trends, the answer is 131 years. That is the amount of time that will have elapsed between 1879, when Thomas Edison first demonstrated his incandescent light bulb, and 2010, when semiconductor-based light-emitting diodes (LEDs) are expected to have made significant inroads into general illumination, a market worth $15 billion.

Since LEDs were first invented over four decades ago, they have mostly been used in niche applications, first as simple indicator lights on calculators or watches and then, as their brightness improved, in displays, signs and traffic signals. More recently, some companies have begun to sell LED fixtures for residential use. “We're on the brink of a new lighting revolution,” says Jerry Simmons, head of the solid-state lighting programme at America's Sandia National Laboratory.

LEDs have become popular because they have numerous advantages over conventional light bulbs. For one thing, they last much longer: they can endure up to a decade of non-stop use compared with a few months or less for incandescent bulbs. They also take up much less space (a typical LED is about the size of the rubber on the end of a pencil), are shock resistant and, perhaps most important of all, are extremely energy-efficient.

An incandescent bulb, made of a wire filament encased in glass, emits only 5% of the energy it consumes as light; the rest is wasted as heat. Fluorescent lights, which consist of tubes filled with mercury vapour, are roughly four times more efficient. LEDs, however, contain no mercury and already rival fluorescents in efficiency. Upfront costs make them too expensive for most general lighting applications, but experts expect that to change over the next five years as prices come down and efficiencies go up.

Worldwide about 20% of all electricity generated is used for lighting. Several studies reckon that LEDs could eventually cut that amount in half. That would not only save billions of dollars in electricity bills, but also significantly reduce energy demand, environmental pollution and greenhouse-gas emissions.

Besides being environmentally friendly, LEDs allow unprecedented control over lighting. Unlike incandescent or fluorescent lamps, which spew light in all directions, LEDs generate directional light, making them ideal for selectively illuminating areas. Moreover, the ability to mix and match the output of red, green and blue LEDs makes it possible to “tune” the emitted light to produce any desired colour. Lighting designers are already using LEDs to illuminate monuments, restaurants and even famous

paintings, such as Leonardo da Vinci's “Mona Lisa”. Because LEDs emit monochromatic light, any potentially harmful or unwanted radiation, such as ultraviolet or infra-red light, can be eliminated.

Back in the dark ages

The first observation of a semiconductor emitting light when zapped with electricity dates back to 1907. But because the amount of light produced was tiny, no one pursued the idea in earnest. That changed in the early 1960s, when Nick Holonyak, a researcher at General Electric, first learned that semiconductors could generate infra-red light. He then set out to make a new type of semiconductor crystal that would be able to emit visible, red light. He succeeded in 1962, inventing the first practical light-emitting diode.

An LED is based on a combination of two semiconductor materials, called n-type and p-type. The n-type is so called because it contains an excess of negatively charged electrons; the p-type contains an abundance of positively charged “holes” that can accept electrons. At the junction where the two materials meet, electrons pair up with holes to form an area depleted of charge that prevents current from flowing. But applying a large enough voltage causes electrons and holes to flow into the junction from opposite sides. As electrons and holes pair up, each electron gives up energy, which is emitted in the form of light. By changing the composition of the semiconductor materials, it is possible to determine the amount of energy given up by each electron, and hence the light's colour.

Even though Dr Holonyak's original red LEDs were dim by today's standards, they were immediately commercialised and ended up being in production for decades. Leaving GE in 1963 for an engineering professorship at his alma mater, the University of Illinois, he schooled over two dozen PhD students who themselves made major contributions to the field. Among them is George Craford, who invented the first yellow LED and is now the chief technology officer at Philips Lumileds, a leading maker of high-brightness LEDs based in San Jose, California.

In 1967 Dr Craford began working at Monsanto, then a chemical company, which mass-produced LEDs for the first time. LEDs then began to appear as indicator lights in calculators and watches, including the famous digital Pulsar watch. In 1971 Monsanto published an advertisement in the *Wall Street Journal* proclaiming that LEDs might eventually be used in car headlights. That was regarded as preposterous at the time, Dr Craford recalls, and a fellow scientist even called the assertion “technically irresponsible”. But Dr Craford expects the prediction to be fulfilled within a year or so.

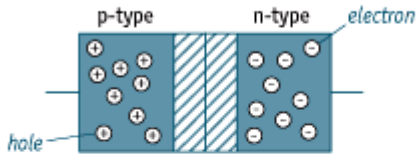
Since those early days, LEDs have been refined in many ways. Researchers developed sophisticated methods to grow high-quality semiconductor crystals, reducing the likelihood that electrons or holes will become trapped by defects. There has also been progress in scaling up the size of LEDs, so that they can be driven at higher currents and generate more light. And design tweaks have improved efficiency by ensuring that light can escape from LEDs easily.

Singing the blues

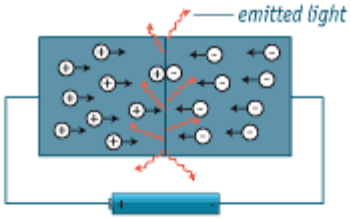
Since the early 1970s, the efficiency of red, orange and yellow LEDs has increased tenfold every ten years. In theory, LEDs should eventually be able to achieve efficiencies close to 100%. In the mid-1980s red LEDs overcame a big hurdle when they surpassed incandescent red bulbs, which are notoriously inefficient since the white light they generate is passed through a red filter, which absorbs 90% of the light. This paved the way for the use of red LEDs in traffic signals, rear lights on cars, and outdoor signs.

Source of illumination

How LEDs work



An LED is based on a combination of two semiconductor materials, called n-type and p-type. The n-type contains an excess of negatively charged electrons; the p-type contains an abundance of positively charged "holes" that can accept electrons. At the junction where the two materials meet, electrons pair up with holes to form an uncharged, insulating layer that prevents current from flowing.



But applying a large enough voltage causes electrons and holes to flow into the junction from opposite sides. As electrons and holes pair up, each electron gives up energy, which is emitted in the form of light. By changing the properties of the semiconductor materials, it is possible to determine the amount of energy given up by each electron, and hence the colour of the light. The semiconductor materials are housed inside a plastic enclosure with a lens that concentrates the emitted light in a particular direction.

Source: *The Economist*

Although scientists made advances with red LEDs, creating bright blue and green LEDs proved much more difficult. Research on gallium nitride, a material that showed promise for blue LEDs, began in the late 1960s at the Radio Corporation of America (RCA), which wanted to use LEDs to create flat-panel televisions. In the early 1970s RCA did succeed in coaxing some light from gallium nitride-based diodes, but its blue LEDs were inefficient and dim. Discouraged, most scientists in the field gave up on the material. Gallium nitride turned out to be difficult to grow without defects, and although n-type gallium nitride could be made easily, p-type could not.

Among the few who did not give up were two Japanese researchers and eventually their persistence paid off. In the late 1980s Isamu Akasaki and his colleagues at Nagoya University created the first p-type gallium nitride by incorporating tiny amounts of magnesium. But the ease with which holes could travel through it was still too low to be practical. A few years later Shuji Nakamura, then a scientist at a small chemical company called Nichia, discovered why. He found that producing p-type gallium nitride, which made use of ammonia at high temperatures, trapped hydrogen atoms inside the crystal. These hydrogen atoms bonded with the magnesium atoms that were supposed to promote hole mobility, preventing them from doing their jobs properly. Heating the crystal in a nitrogen atmosphere, Dr Nakamura found, released the hydrogen atoms and dramatically improved the ease with which holes could move around.

In the end it was Dr Nakamura who announced the creation of the first bright blue LED in 1993, followed by the first bright green and bright white LEDs a few years later. His success took the world by surprise. When he began working on blue LEDs in 1989, he had no PhD, had never published a paper, and Nichia was an unknown company located on the smallest and least populated of the four main Japanese islands. Managers initially provided little support for his research, though Nichia's president later authorised more funding for the project.

The payoff turned out to be huge. The availability of the whole spectrum of colours opened up new applications, from full-colour video screens to display backlighting. Between 1995 and 2005 the market

for high-brightness LEDs grew from $122m to $3.9 billion, an average of 41% a year, says Robert Steele of Strategies Unlimited, a research firm based in Mountain View, California. Nichia itself made a tidy sum, with sales of about $1.7 billion in 2005. Dr Nakamura wrote several influential papers and went on to become one of the pre-eminent researchers in the field. But he initially received only a pitiful $200 bonus for his inventions. He made headlines in 1999 when he left Nichia, took a position at the University of California Santa Barbara, and in 2001 sued his former employer in a patent dispute that was recently settled for $7m.

Today there are two basic approaches to generating white light with LEDs. The simplest and most common way is to coat a blue LED with a yellow phosphor. The blue light from the LED excites the phosphor, causing it to emit cool white light. But some energy is lost in the process. Combining red, green and blue LEDs to produce white light has the potential to be more efficient, and the colour of the light could be tuned depending on mood or taste. The drawback of this approach is that it is difficult and expensive to match and maintain the output of multiple LEDs over long periods.

To tackle these and other problems, many countries have created multi-million-dollar LED research programmes. America's government-sponsored Next Generation Lighting Initiative, which has funded more than 70 different LED projects to date, aims to triple the efficiency of white LEDs by 2025. To some that is a conservative benchmark. “I think we'll be there much sooner,” reckons Neal Hunter, the former chairman of Cree, one of the world's leading LED manufacturers. Dr Hunter is now the boss of LED Lighting Fixtures, a firm based in North Carolina that is working to make LEDs more suitable for use in general illumination. It recently set an efficiency record for a white-light LED fixture.

So far, only a handful of firms are specialising in this market. To compete with the light output of a single 60-watt incandescent bulb that emits about 800 lumens (a measure of light power as perceived by the human eye), companies such as LED Lighting Fixtures and Permlight of Southern California are designing lamps based on clusters of white LEDs that achieve a similar lumen output, but consume a fraction of the power. Initial costs are still higher for such fixtures than for traditional bulbs, but lower electricity bills could make up the difference within a year or two, says Dr Hunter.

The size of LEDs allows for far greater choice in fixture design, though people disagree on how receptive consumers will be to such possibilities. “The shape of lamps will change,” believes James Brodrick, who manages America's solid-state lighting research programme for the Department of Energy. Color Kinetics, a firm based in Boston, already makes LED fixtures resembling large tiles that can be mounted on walls to create checkerboard-like effects or morphing colours.

“Light bulbs are among the last devices that use vacuum tubes, an old technology that has been replaced in radios and most televisions.”

LEDs made of organic materials, called OLEDs, promise even more revolutionary design possibilities. Since they were first commercialised a few years ago, they have mostly appeared in small portable devices, such as mobile phones and digital music-players. Based on ultra-thin, lightweight plastic sheets, OLEDs emit a softer, more distributed light than conventional LEDs and might eventually be turned into softly glowing wallpaper or curtains.

Because OLEDs are not as reliable and long-lasting as conventional LEDs, some scientists have been tempted to belittle their importance, just as LEDs themselves were originally underestimated in their early years. That could be a mistake, says Fred Schubert, an engineering professor at the Rensselaer Polytechnic Institute in Troy, New York, who heads the university's Future Chips Constellation laboratory. “As researchers”, he says, “we always have to be ready for surprises.”

Those in the field may disagree about the prospects of OLEDs, but they do seem to agree on one thing: the days of the incandescent bulb are numbered. Conventional light bulbs are among the last devices that use vacuum tubes, an old technology that has long been replaced in radios and most televisions, notes Sandia's Dr Simmons. “Ultimately, incandescent light bulbs will end up in a museum, just like vacuum tubes did for electronics,” he says.

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Lighting up the world

Sep 21st 2006
From The Economist print edition

The greatest impact of LED-based lighting could be in developing countries, where it can be powered by batteries or solar panels

MightyLight shines bright

WHILE trekking in Nepal in 1997, Dave Irvine-Halliday was struck by the plight of rural villagers having to rely on smelly, dim and dangerous kerosene lanterns to light their homes. Hoping to make a difference, Dr Irvine-Halliday, a professor of electrical engineering at the University of Calgary in Canada, founded the Light Up The World Foundation. The non-profit organisation has since helped to distribute low-power, white light-emitting diodes (LEDs), at low cost or free, to thousands of people around the globe.

About 1.6 billion people worldwide are without access to electricity and have to rely on fuel-based sources for lighting. But burning fuel is not only extremely expensive—$40 billion is spent on off-the-grid lighting in developing countries a year—it is also highly inefficient and contributes to indoor air pollution and the emission of greenhouse gases. If people switched from using fuel-based lamps to solar-powered LEDs, carbon-dioxide emissions could be reduced by up to 190m tonnes per year, reckons Evan Mills, a staff scientist at America's Lawrence Berkeley National Laboratory. That is equivalent to one-third of Britain's annual carbon-dioxide emissions.

LEDs are an ideal off-the-grid light source because they need so little power. They can be run on AA batteries, or batteries recharged using small solar arrays. Compared with kerosene lanterns, LEDs can deliver up to 100 times more useful light to a task, besides being extremely long-lasting. All this adds up to a life-changing impact for the lamps' owners, ranging from increased work productivity, more time to study at night and reduced health problems and fire hazards.

Several firms are getting ready to tap into this underserved market. Cosmos Ignite Innovations, a spin-out from Stanford University that is now based in New Delhi, India, has developed the MightyLight, a solar-powered LED-based lamp that is waterproof, portable and runs for up to 12 hours. So far, Cosmos has sold nearly 5,000 of its $50 lamps to various charities.

Another company, Better Energy Systems of Berkeley, California, is testing LED add-ons that might work well with its Solio, a portable solar array that can also be used to charge mobile phones and other devices.

The International Finance Corporation (IFC), the private-sector investment arm of the World Bank, recently secured $5.4m in financing for “Lighting the Bottom of the Pyramid”, a four-year initiative that will engage lighting manufacturers with pilot projects in Kenya and Ghana.

One task is to make LEDs affordable, says Dr Mills, who is a consultant on the IFC project. Households in rural Kenya, for example, spend an average of $7 a month on kerosene for lighting. Although the cost of a solar-powered LED lamp over its lifetime is much less than the cumulative cost of fuel, many people cannot afford the initial $25 to $50 outlay for such a lamp. If that hitch could be ironed out—via microfinance, perhaps—the payoff could be bright.

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Concrete possibilities

Sep 21st 2006
From The Economist print edition

Materials: It has been in use for centuries. But now, tired of being walked all over, concrete is ready for a high-tech upgrade

THE Wizard of Menlo Park had a magic touch, but it sometimes failed him. In 1906 Thomas Edison declared that he had hit upon the “salvation of the slum dweller”—cheap concrete houses cast from single, reusable moulds. Though his Edison Portland Cement Company went on to supply concrete for New York's Yankee Stadium and the first concrete highway, the great man's dreams for concrete died amid complex, expensive moulds and 11 unsold demonstration houses.

A century later, materials scientists and their business partners have been picking up where Edison left off. In their search for more high-tech concrete mixtures, they have found a fast, innovative way to make cheap, durable housing for both the developing and the developed world. Other researchers have been extending Edison's asphalt altruism in new directions, trying not only to reduce concrete's environmental impact but also to use concrete to clean up the environment.

The recipe for concrete is simple and has been around, in one form or another, since the days of Ancient Egypt. The bulk of the material consists of aggregate—fine particles such as sand and coarse ones such

as gravel or crushed stone. When water and a powdered cement are mixed in, they undergo a chemical reaction that hardens and binds the aggregates into a solid mass. To make the cement, materials such as limestone and clay are heated in large kilns to over 1,000°C. At such high temperatures, water and carbon dioxide are driven off and the limestone and clay begin to fuse to form new compounds. These are then ground into a fine powder that goes by the name of Portland cement. In America alone over 100m tonnes of the stuff are used each year.

But like good chefs, materials scientists have long known that they can tweak the basic concrete recipe to create any number of desired effects. For example, adding chemicals that encourage the trapping of tiny air bubbles makes concrete more durable, because it gives water room to expand into when it freezes, thereby avoiding tiny cracks. In the late 1990s researchers began to experiment with another additive—small amounts of electrically conductive steel or carbon fibres. Even though the fibres make up less than 1% of the concrete by volume, they have a large effect: the resulting concrete gains the ability to conduct electricity.

Electric avenues

Such concrete has a range of interesting properties. If you compress electrically conductive concrete, the fibres get slightly closer together, increasing the concrete's electrical conductivity. So if a road is made from conductive concrete, it will be able to monitor and weigh passing traffic.

That is not all a conductive concrete road can do. Passing an electrical current through a wire causes it to heat up, just like the filament in a light bulb. An electric current will heat a road, a bridge, or a runway made of conductive concrete in just the same way. For the past three winters, the Roca Spur Bridge outside Lincoln, Nebraska, has been warming itself using an electric blanket of conductive concrete. Christopher Tuan of the University of Nebraska-Lincoln and his former student, Sherif Yehia, have been carefully monitoring the bridge. Using electrical heating, they can maintain Roca Spur at a toasty 10°C above the ambient temperature, warm enough to keep it free of snow and ice throughout the winter.

Although their conductive concrete is roughly four and a half times more expensive than ordinary concrete, Dr Tuan notes that this does not include the costs of accidents or corrosion due to the salt used to de-ice roads. Furthermore, using the concrete as a heater does not degrade the mechanical properties or the durability of the concrete, unlike embedding wires and sensors in traditional concrete. Conductive concrete could thus be used on heavily used bridges or airport runways. Dr Tuan is looking for people to license and commercialise his technology.

“The kilns that produce Portland cement also produce large amounts of carbon dioxide, accounting for 5-10% of global emissions.”

In theory, conductive concrete could also find uses in buildings. A floor of conductive concrete could reveal when someone had entered or left a room—a handy way to detect intruders or control heating and lighting. It could be used for underfloor heating, too. A building with beams of conductive concrete could detect changing loads and damage during an earthquake. Conductive concrete walls can also shield sensitive equipment from electronic eavesdroppers.

Dr Jaycee Chung of Global Contour, an engineering firm based in Rockwall, Texas, cautions that such ideas are far from being realised. Although laboratories have been refining recipes for conductive concrete for years, testing in buildings is only now getting under way. The chief task is to build systems to monitor the electrical signals coming from conductive-concrete structures. Global Contour has been developing special wireless sensors to do just that. And Dr Chung has raised half the money needed for a building in Texas to demonstrate conductive concrete's gift for self-sensing and electromagnetic shielding.

The American army, which has funded part of Global Contour's research, is interested in using conductive concrete in military facilities and bunkers, as well as on roads at border crossings. The Institute for Construction Research (IRC), a division of National Research Council Canada and one of the pioneers of research into conductive concrete, is also in the first stages of financing demonstration projects. The first conductive-concrete houses and offices are likely to appear in the next few years.

Casa de concrete

Self-sensing houses may appeal to the extravagant few who can afford them, but another concrete technology promises to help those who cannot. Grancrete, a company based in Mechanicsville, Virginia, has been working on a new type of ceramic, cement-like material for making quick, durable and cheap “spray-on” housing for the billion or so people in the world who lack it. Grancrete, as its invention is known, has its origins in a material invented to encapsulate nuclear waste. Its developers soon realised, though, that its real potential lay in housing people, rather than plutonium.

A small local team can be trained to mix and to apply the grancrete, which is made from a mixture of sand and a special binding agent. The team uses a hose to spray a thin coating onto a simple frame. Because grancrete binds to many surfaces, the frame can be made from wood, metal, or even polystyrene or woven matting. When it hardens, 20 minutes later, the grancrete structure is twice as strong as traditional concrete, and it is durable, fire-resistant, waterproof and non-toxic—more than can be said for most of the poor's housing. Salt does not corrode it, so it is suitable for use in coastal areas and its insulating properties mean that it can be used both in hot and cold climates. It should also be strong enough to withstand hurricane-force winds.

Jim Paul, Grancrete's chairman, reckons that a team of two can build a simple house in two days. All in all, he estimates that low-cost housing can be made for $12 to $15 per square foot. Grancrete opened its first full-scale production plant this summer. So far, it has performed proof-of-concept demonstrations in Venezuela and Panama, and is preparing for more in Mexico, Canada, Argentina and America.

Another new type of concrete is at an even earlier stage. Bill Price, an architecture professor at the University of Houston, has been making concrete embedded with glass or plastic mixtures and different binding agents. The resulting thin concrete panels are translucent. Dr Price has made translucent concrete into bricks and into pre-cast panels that are suitable for non-load-bearing walls. It has been exhibited at the National Building Museum in Washington, DC, at the Musée des Arts and Métiers in Paris, France, and in a pavilion near Chaumont, also in France, designed by Dr Price, his colleague Peter Zweig, and their students. So far, however, there are no firm plans for commercialisation. Dr Price's next step is to include it in new buildings around Houston, starting with a 2.5-metre by 5-metre (8ft by 16ft) wall in a residential building.

Concrete is the second-most widely used material on earth after water. Each year, about one cubic metre of the stuff is produced for every man, woman and child on the planet. Not surprisingly, an industry of this size has a big effect on the environment. In and of itself, concrete is a durable and environmentally friendly material. Unfortunately, the kilns that produce Portland cement also produce large amounts of carbon dioxide—roughly one tonne of it for each tonne of cement. As a result, cement-making is thought to account for some 5-10% of global carbon dioxide emissions.

As concern over greenhouse-gas emissions has risen, so too has interest in materials that can replace Portland cement. Fly ash (the residue trapped in the chimneys of coal-fired power plants), blast-furnace slag (a by-product of steelmaking) and condensed silica fume (a waste-product of the semiconductor industry) have all been tried as replacement cements. Laila Raiki of the Canadian IRC thinks that the use

of such supplementary cements has yet to be fully exploited. Questions remain over such things as the quality and transport costs of the waste. But the IRC wants to use such industrial by-products to make practical objects, such as roofing tiles.

Scientists have also been using concrete to get rid of unwanted material—giving waste, as it were, the proverbial concrete boots. Highly toxic materials such as the ash left over from incinerating municipal solid waste, or material dredged up when maintaining a port, are difficult and costly to dispose of. By encapsulating them in specially treated concrete, they can be dumped and serve a useful function, too. Christian Meyer, professor of civil engineering at Columbia University, has come up with treatments that allow waste glass to be used as an aggregate in concrete. Normally, glass reacts with cement, causing the concrete to swell and crack. The specially treated glass concrete is less water-absorbing, more durable, more chemically resistant and aesthetically pleasing. In addition, it encourages the recycling of glass.

Wausau Tile of Wausau, Wisconsin has licensed Dr Meyer's technology to make decorative tiles and planters. In 2005 they used over 270 tonnes of recycled coloured glass. Sales of their recycled-glass concrete products in 2005 were 45% higher than in the previous two years; sales so far in 2006 are up another 20%, as builders show more interest in green construction techniques. “We're still learning how to use recycling,” Dr Meyer says. As space in landfills grows short and gravel pits are mined for aggregate, he thinks alternatives like his glass will become more attractive. So concrete research continues at a furious pace. Thomas Edison would be proud.

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Secrets of the digital detectives

Sep 21st 2006
From The Economist print edition

Computing: How fraud-detection systems combine dozens of clues to spot suspicious patterns in mountains of transactions

THE pleasure of reading a classic detective story comes from the way that the sleuth puts together several clues to arrive at a surprising conclusion. What is enjoyable is not so much finding out who the villain is, but hearing the detectives explain their reasoning. Today, not all detectives are human. At insurance companies, banks and telecoms firms, fraud-detection software is used to comb through millions of transactions, looking for patterns and spotting fraudulent activity far more quickly and accurately than any human could. But like human detectives, these software sleuths follow logical rules and combine disparate pieces of data—and there is something curiously fascinating about the way they work.

Consider car insurance. Every Monday morning, telephone operators at insurance firms listen to stories of the weekend's motoring mishaps, typing the answers to several dozen standard questions into their computers. Once, each claim form then passed to a loss adjuster for approval; now software is increasingly used instead. The Monday-morning insurance claims, it turns out, are slightly more likely to be fraudulent than Tuesday claims, since weekends make it easier for policyholders who stage accidents to assemble friends as false witnesses. A single rule like that is straightforward enough for a human loss adjuster to take into account. But fraud-detection software can consider dozens of other variables, too.

If a claimant was nearly injured (because of an impact near the driver's seat, for example), the accident is less likely to have been staged and the claim less likely to be fraudulent, even if it is being filed on a Monday. Drivers of cars with low resale values are proportionately more likely to file fraudulent claims. But that factor is less important if the claimant also owns a luxury car, which suggests affluence. And if the insurance on the luxury car has expired, the likelihood of foul play drops further, since this increases the likelihood a person will drive a cheaper but properly insured car. And so on.

The staggering number of combinations, each an indication of fraud or legitimacy, underscores the limitations of human analysis. Fraud-detection software, however, can evaluate a vast number of permutations and deliver a fraud-probability score. And such programs are getting better as new claims provide extra statistics that can help tune the computational recipes, or algorithms, used to detect fraud.

German insurers, for example, recently noticed that claimants who call back shortly after filing, angrily demanding speedy settlement, are disproportionately more likely to be cheaters, says Jörg Schiller, an insurance expert at the Otto Beisheim School of Management in Vallendar, Germany. Evidently fraudsters consider themselves good actors. But when pugnacious policyholders call after the 20th of the month, the probability that they are acting decreases slightly, since funds from the previous month's paycheque may

be dwindling. Mr Schiller says most car insurers in rich countries now use fraud-detection software, and those in developing countries are adopting it rapidly.

Play your cards right

With an estimated $250m in annual sales, and yearly growth topping 25%, the largest and fastest-growing category of fraud-detection software is that used to spot fraudulent credit-card transactions. According to the Association for Payment Clearing Services, based in London, such software is largely responsible for reducing losses from credit-card fraud in Britain alone from £505m ($925m) in 2004 to £439m ($799m) in 2005. Merchants implementing anti-fraud software for the first time commonly see losses from fraud reduced by half. Such software evaluates many parameters associated with each credit-card transaction, including specific details of the items being purchased (derived from their bar codes), to evaluate the likelihood of foul play in the form of a numerical risk score. Any transactions that score above a certain pre-defined threshold are then denied or challenged.

Buying petrol seems innocent enough. If no attendant is present, however, the risk score goes up, because fraudsters prefer to avoid face-to-face purchases. Buying a diamond ring soon after buying petrol results in an even higher risk score: thieves often test a card's validity with a small purchase before buying something much bigger. A $100 purchase at a shop that sells hard liquor is more likely to be fraudulent than a more expensive shopping spree at a wine shop, because whisky is easier to fence. A purchase of sports shoes is risky because trainers appeal to a demographic with less money than, say, buyers of golf clubs. Buying two pairs of trainers increases the risk, as this may indicate plans to resell them. Shoes in teenage sizes bump up the score further, since pre-teens are less likely to buy stolen goods. Sales in London, New York or Miami, all cities with vibrant black markets for shoes, push scores higher, as do purchases made during school holidays. The fraud history of individual shops can also be taken into account.

Seasoned criminals can, of course, figure out such rules and change their behaviour in an attempt to avoid detection. Some types of purchases are less likely to be fraudulent. A shopping spree in a linen shop, however, does not have much appeal to most criminals. However, says Mike Davis, a fraud expert at Butler Group, a consultancy, the “vast majority” of fraudsters are low-level opportunists fairly easily foiled by today's fraud-detection software. The situation, he says, is “spectacularly better” than it was just a few years ago.

But the technology trips up cleverer fraudsters too, using a variety of tricks. The software can, for example, assign a customised scoring algorithm to each credit card, depending on its normal usage patterns. That algorithm can then be fine-tuned after each transaction. If a card belonging to a Berliner has never been used to purchase a plane ticket or buy goods outside Germany, the system may block an attempt to book a Moscow-Tokyo flight leaving in three hours. An attempt to charge a moped to an elderly woman's card may fail. Cards are often blocked when the volume of transactions for which they are used abruptly spikes.

E-businesses using anti-fraud software now block about 8% of all transactions. Some aborted orders, of course, are not fraudulent. Each “false positive” reduces profits and angers an honest shopper. To limit such damage, risk managers (employed by the software developers or the merchants themselves) study sales data compiled before the anti-fraud software was implemented. This analysis helps retailers find the optimal score threshold to determine which orders they accept.

Online fraudsters have tricks of their own, of course. Carl Clump, the boss of Retail Decisions, a fraud-detection firm based near London with clients including Wal-Mart, Sears and Bloomingdale's, offers an example. Not long ago, American scammers began buying CDs of classical music with their purchases of expensive items, apparently in an effort to deceive anti-fraud systems (since such music is generally assumed not to appeal to young, tech-savvy criminals). Retail Decisions' software, called PRISM, detected the trend. Now, purchases that combine classical or opera CDs with expensive goods receive a higher score than purchases of high-cost items alone.

By reading a computer's internet-protocol address, anti-fraud systems can “geolocate” online buyers, and raise or lower scores depending on where they are. Most systems penalise customers in places such as Eastern Europe, China, Thailand and Vietnam. More dramatically, many merchants block all transactions from certain countries. As this practice becomes more widespread, many countries, mostly in West Africa, are being completely shut out of international e-commerce. SN Brussels Airlines, for example, uses software developed by Ogone, a Belgian firm that protects more than 6,400 European merchants, to

shut out all computers in Liberia and Congo. Without it, says Bruno Brusselmans, director of online sales, “I don't even want to think about what would happen.”

Telecoms firms have always suffered heavily from fraud, which is thought to reduce industry revenues by around 5%. But new software that identifies fraudulent callers on mobile networks is helping some operators slash their losses. Telecom Italia's 140 anti-fraud engineers trimmed losses this year to less than 1% by freezing about 30,000 phones a month, says anti-fraud director Fabio Scarpelli.

Such spectacular drops in fraud are more commonplace in the developing world, where mobile operators now investing in the technology. David Ronen, of ECtel, a firm based in Rosh Ha'ayin, Israel, with more than 100 telecoms clients and galloping growth in poor countries, says his firm's software establishes the normal calling patterns of individuals in order to detect tell-tale “weird situations”. For example, if a mobile account opened in Shanghai, and sparingly used for local calls, begins making numerous calls from Beijing to a few numbers in a distant western province, then it is likely that a phone thief is calling friends back home.

Fair Isaac, a large fraud-detection firm based in Minneapolis, operates a system so fast that it can block dialled calls before they are even connected. The software, called Falcon, is widely used, since laws prevent many telecoms firms from terminating non-prepaid calls once they are connected. Wily criminals are increasingly operating black-market phoning businesses based in parks and on street corners. “You may see 30 people with cell phones on one corner and one guy is dialling all the numbers for them,” says Ted Crooks of Fair Isaac. The calls, often to expensive destinations in poor countries, sometimes last days, Mr Crooks says, because cheats use forwarding systems to serve many customers with a single call. Technology that can pinpoint handsets' locations, however, allows calls in “hot” areas renowned for such illicit operations to be blocked.

It is all a far cry from piecing together clues in a country house, or the drudgery of real-life detective work. But the result is the same. Life gets harder for the bad guys, and the honest citizens, who ultimately pick up the bill for fraud, are protected. The digital detectives, like those in mystery novels, arrive at their conclusions by combining apparently trivial morsels of information. But as Sherlock Holmes put it, “I am glad of all details, whether they seem to you to be relevant or not.”

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Mr BlackBerry sends a message

Sep 21st 2006
From The Economist print edition

Mike Lazaridis, co-founder of the firm behind the BlackBerry, is a passionate advocate of fundamental scientific research

SOME pocket-sized electronic gadgets are merely successful, but an exalted few become household names. The Walkman, Game Boy and iPod are examples from the consumer market; and in the business world, the BlackBerry has attained a similar iconic status. During meetings and in airport lounges, managers can be seen furtively tapping out messages on this nifty device, which keeps them constantly updated with their office e-mail anywhere they can get a wireless signal. So compulsive is such “push e-mail” that the term “CrackBerry” has been coined to describe the addiction.

Yet just a decade ago, the whole idea that adults would happily type e-mails using a keyboard the size of a credit card seemed absurd. It was late one night in 1997, while sitting in his basement, that Mike Lazaridis suddenly glimpsed the future. In a paper he drafted on the spur of the moment, entitled “Success Lies in Paradox”, he asked, “When is a tiny keyboard more efficient than a large one?” The answer to his riddle: when you use your thumbs. Mr Lazaridis e-mailed his vision of a new device to colleagues at Research In Motion (RIM), the Canadian company based in Waterloo, Ontario, that he had co-founded in 1984 with Douglas Fregin, a childhood friend. A year later the BlackBerry was born.

Fortune favours the well-prepared mind, and for Mr Lazaridis, the preparation started at school, where he loved to tinker with electronics and ham radios. In a prophetic moment, an electronics workshop teacher told him that the person who combined computers with wireless would be on to something big. Of course, the BlackBerry is not unique in achieving that combination. Rather, it relies on a series of innovations, such as the keyboard optimised for “thumbing”, a clickable scroll wheel and menus pared down as much as possible—all of which are designed to please busy executives.

“We take a very measured, scientific approach to what we do—we're not just chasing what others have,” says Mr Lazaridis. His role at RIM, where he is co-chief executive, is to oversee the company's technology development; Jim Balsillie, a Harvard MBA who joined the company in 1992, handles the financial side of the business.

Having settled a long-running patent dispute with a $612.5m out-of-court payment earlier this year, RIM is on a roll. The millionth BlackBerry subscriber signed up in 2004. In March, barely two years later, the number of subscribers passed 5m. The firm is almost doubling in size each year and Mr Lazaridis confesses that this is one his biggest headaches. “We have to make sure the new half does not go and make mistakes that have been avoided by the other half,” he says. Most entrepreneurs would love to have such a problem. No wonder that Mr Lazaridis, who has won his country's top innovation award among other accolades, is often called “the Bill Gates of Canada”.

The cosmic connection

Such is the iconic status of the BlackBerry that Mr Lazaridis was asked to appear in a recent advertisement by American Express. Mr Lazaridis is shown sketching a BlackBerry in a room lined with equation-laden blackboards. The academic setting is no exaggeration. Mr Lazaridis is fascinated by fundamental physics, a passion in which he invests as a philanthropist. In 2000 he founded the Perimeter Institute for Theoretical Physics, just outside Waterloo University, donating C$100m ($66m) to establish an institute where boffins struggle to reconcile the force of gravity with quantum mechanics, by postulating that the universe has hidden dimensions or that space and time have a granular structure.

At first sight, this seems like a highly esoteric form of philanthropy, far removed from the world-saving urgency of, say, the real Bill Gates, who is backing new drugs to cure diseases such as malaria. But for Mr Lazaridis, this is enlightened, if rather long-term, self-interest. He sees a direct link between basic science and Canada's technological future. “This is a cornerstone of a country's competitiveness. You can never invest too much in basic research,” he says.

It is a refreshingly far-sighted view from a business leader. Indeed, some would argue that it is a trifle naive. What difference does it make whether a country such as Canada supports basic science, as long as its industry is ready to benefit from the technological spin-offs of basic science performed elsewhere?

When asked about this, Mr Lazaridis quotes a 1945 report by Vannevar Bush, called “Science, the Endless Frontier”. Bush was the man who co-ordinated American research during the second world war, overseeing one of the most portentous applications of science in the history of mankind—the building of the atom bomb. Yet in the report, Bush argued eloquently for the need to fund basic research that is unfettered by industrial or social demands.

For decades, his influential views have helped to promote a linear model of innovation where curiosity-driven research begets technology, which is then transformed by industry into products that benefit society. But in recent years, the model has come under scrutiny. Funding agencies in many industrialised countries are increasingly shifting support towards applied science, and are insisting that even basic research must be directly relevant to the taxpayers who support it.

Mr Lazaridis is quick to point out that the linear model—a caricature of Bush's arguments in his view—is too simplistic. “You don't go from the laboratory test-tube straight to someone's garage and then on to success—that's a fable,” he says. For him, the correlation between basic science and industrial achievement makes sense only if you look over long time scales. And, he explains, “you've got to have all the parts in place, including efficient mechanisms to train young people who will transfer new scientific knowledge to industry, as well as companies that are ready and receptive to employ and empower that talent.” In other words, basic science is a necessary but not sufficient condition for remaining industrially competitive.

“Mr Lazaridis expects his philanthropy to produce some demonstrable payoff for his own firm. In fact, he thinks this is already starting to happen.”

A quantum leap

Putting this philosophy into practice, Mr Lazaridis made further donations in 2004 and 2005, totalling C$50m, to found the Institute for Quantum Computing (IQC) at the University of Waterloo and to link it to the university's nanotechnology programme. A decade ago quantum computing was just the sort of pie-in-the-sky topic that theoretical physicists of the kind which populate the Perimeter Institute loved to talk about, but which seemed far removed from any practical application. But that is no longer so.

Quantum computing turns to its own advantage some of the apparent limitations that quantum physics imposes on the atomic world—where Heisenberg's uncertainty principle rules and particles behave in unpredictable ways. One neat trick is to create qubits, the quantum equivalent of the 0s and 1s on which digital information is based. Computers that process qubits, which weirdly manage to be both 0 and 1 at the same time, are far faster at solving some problems—such as factoring large numbers into primes, a step in code-breaking.

Mr Lazaridis explains with evident pride that researchers at IQC recently published the first experimental demonstration of a 12-qubit computer. Although that sounds small compared with the megabits that ordinary computers routinely deal with today, he points out that “it wouldn't take many more qubits to get something quite useful”. Already, quantum cryptography, a branch of quantum computing that uses qubits to ensure the secure transmission of information, has spawned start-up companies selling commercial products. “Quantum computing is probably accelerating faster than the early days of

electronic computing," says Mr Lazaridis. "It's amazing that we can say that quantum cryptography is already almost old hat."

Mr Lazaridis's advocacy of science and education has won him acclaim in Canada. He became chancellor of the University of Waterloo in 2003—even though nearly 20 years earlier he had dropped out of his engineering course at the university to start RIM, much to his parents' dismay. But he does expect his philanthropy to produce some demonstrable payoff, including for his own firm. In fact, he thinks this is already starting to happen, as RIM strives to maintain its lead in wireless e-mail devices.

RIM cannot afford to rest on its laurels. Having created a new category with the BlackBerry, it now faces a host of rivals, including Palm's Treo, the Motorola Q and the Nokia E61. As e-mail becomes a standard feature on expensive mobile phones—according to Gartner Group, a consultancy, some 100m smartphones will be sold this year—BlackBerry will have to try harder to differentiate itself. Similarly, RIM's pioneering "push e-mail" technology, whereby incoming messages are sent straight to the device immediately, has now been replicated by rivals such as Microsoft.

Even so, Mr Lazaridis is optimistic about RIM's prospects. The BlackBerry is not just a device, he insists, but a component of an entire "solution" that includes the server technology and partnerships with operators to provide network access. RIM has licensed its software to other firms, including Nokia, so that they can incorporate BlackBerry functionality into their devices. The company is also moving beyond e-mail, by providing the tools for mobile devices to gain access to other software, such as sales- and inventory-management systems.

But the area where Mr Lazaridis thinks that RIM has a special edge is data security. "I believe that security is underestimated by the industry at present," he says. "Regulatory issues, such as the Sarbanes-Oxley act in America, are affecting how corporate data is maintained and secured, including on wireless devices." He points to customers such as America's armed forces, the British police force, recent validation of RIM's security model by NATO and a long list of security certifications obtained in various countries, to illustrate his point. Analysts seem to agree: Gartner refers to RIM as "the gold standard" for wireless security.

And it is in just this area that Mr Lazaridis sees early signs that his commitment to nurturing basic science is paying off. "I was quite proud of the fact that last year we hired our first quantum cryptography PhD from IQC, and he went straight into our cryptography labs," he says. "That's how seriously we take the whole security part of the platform."

The point is not that BlackBerrys are about to process qubits anytime soon. But by helping to attract talented scientists to Canada, Mr Lazaridis can furnish his company, and many others besides, with the bright young people who will sustain the country's technology industry in years to come.

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Sep 21st 2006
From The Economist print edition

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European telecoms

Swamp things

Sep 21st 2006
From The Economist print edition

How Europe's struggling telecoms incumbents compare

THEY once strode the world as giants, bearing the names of the countries from which they sprang. But eight years after their industry was liberalised and five years after a financial crisis that brought some close to collapse, Europe's big telecoms incumbents face troubled times. The crisis is most apparent at Telecom Italia: its chairman, Marco Tronchetti Provera, resigned last week after falling out with the government over his plans to restructure the debt-laden company. He was motivated in part by a desire to raise money for the rest of his ailing business empire. But Telecom Italia's woes—slowing growth in mobile telephony, a decline in core fixed-line revenues, a growing threat from upstart competitors, huge debts and government intrusion—are common to its dinosaur-like peers in other European countries.

“The economics are not getting better,” says Stephen Pentland of Deloitte, a consultancy. The incumbents, he says, will generate “fundamentally lower levels of earnings than we've seen historically.” In response, these vast companies have adopted broadly similar strategies. Domestically, they are combining services—fixed and mobile telephony, broadband internet access and television—to sell as a single “converged” bundle. And they are going abroad for growth, entering foreign markets through their mobile and broadband operations. The result, however, is that they are finally starting to compete with each other properly—and are thus feeling the pain.

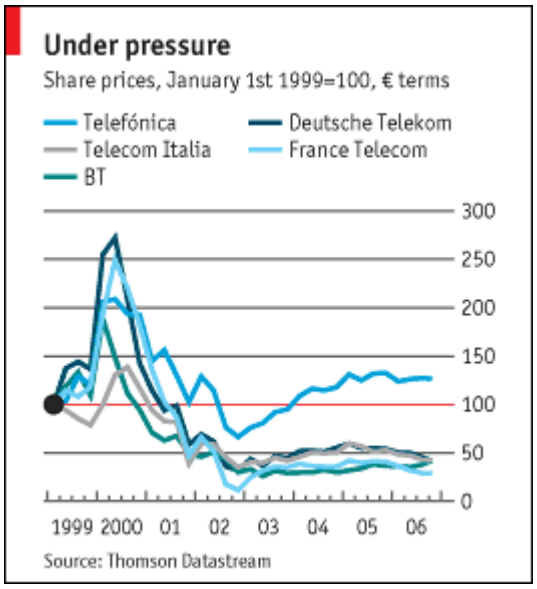
In Germany Deutsche Telekom faces competition from a plethora of rivals that have together claimed 45% of the home market. This week Telecom Italia agreed to buy one of them, AOL Germany, for €674m ($870m). Deutsche Telekom lost 1m fixed-line subscribers in the first half of the year, and of the 400,000 broadband lines it activated in the past 12 months, over 95% were for its rivals to resell. Kai-Uwe Ricke, the firm's boss, unveiled a restructuring plan this month to cut costs and develop its American mobile arm, T-Mobile USA, whichis seen as Deutsche Telekom's prize asset, despite being a laggard in America.

France Telecom is also struggling—though its response has been more assertive. It has relaunched its services under the “Orange” name in France and abroad. With its strong brand and its bundle of fixed, mobile and broadband services, Orange poses a threat to incumbents in other countries. But domestic competition is brutal, with rivals claiming around 40% of the market. Neuf Cegetel, the second-largest

operator, plans to list 20% of its shares in October; Iliad, a dynamic upstart, plans to invest €1 billion in a new fibre-optic network over the next six years.

Telefónica of Spain seems to be bucking the trend: it has posted strong growth thanks to acquisitions. In the past 18 months it has bought O2, the former wireless arm of BT that operates in several European countries, a 51% stake in the Czech Republic's incumbent operator and stakes in operators in Latin America (from where it derives one-third of its revenue). Domestically, Telefónica faces competition from cable companies and from France Telecom, which bought a mobile operator, Amena, last year. Even so, it retains a dominant 66% of the fixed-line market and 69% of the broadband market.

As a result, Telefónica's share price is doing relatively well (see chart). But the firm has an advantage over its peers: Spanish law lets it write off goodwill against tax when making acquisitions, which means it can afford to pay more than rivals.



In Britain BT has done well by sharpening its focus. It concentrates on selling broadband to consumers at home and to business customers abroad. It beefed up its lucrative computer-services arm. It agreed with regulators to separate its services business from its network division, as Telecom Italia now proposes—and European regulators would like all incumbents to do. And it was an early proponent of next-generation "converged" networks, which cost less to run. "BT went through a massive restructuring, mostly in its mindset—are you willing to cannibalise yourself?" says Ben Verwaayen, BT's boss. "We had no other option, and I think we came out on top." Unlike other incumbents, BT has no mobile arm, having spun off O2 to reduce its debts. Instead, it resells airtime from Vodafone, Europe's biggest mobile operator.

Telecom Italia was also regarded as a leader in convergence. Two years ago it paid €20 billion to take full control of its mobile arm, Telecom Italia Mobile (TIM). Tight integration between fixed and mobile units, it argued, would save money and make possible new services. Yet it has now changed its mind, proposing to spin off TIM in order to reduce its debts. Like BT, it could then buy mobile capacity from a mobile operator. But the prospect of TIM falling into foreign hands sparked an outcry from the government, which still holds a "golden share" in Telecom Italia.

Romano Prodi, the prime minister, went so far as to disclose the minutes of a private meeting with Mr Tronchetti Provera that took place in July. In doing so, he signalled to any potential buyers of TIM that the government was opposed to any sale. Such mischief is particularly outrageous given that Mr Prodi, a former president of the European Commission, used to be a stern critic of economic nationalism.

The French and German governments, both of which own around 30% of their incumbents, are also interfering—but to help rather than hinder. Germany's government proposed giving Deutsche Telekom an exemption from the need to share its new high-speed network with rivals, but backed down after complaints from European regulators. In France the government is accused by the commission of giving France Telecom preferential tax treatment equivalent to €1 billion in illegal subsidies.

Now that Europe's incumbents are moving into each other's markets, competition will only intensify. That should be good for consumers, but will strengthen the case for consolidation. Bigger firms would have more clout when negotiating with content owners, notes Konstantinos Apostolatos of Arthur D. Little Benelux, a consultancy. Yet as governments seek to block foreign takeovers of energy firms amid smouldering economic nationalism in Europe, the prospects for consolidation of the telecoms incumbents look bleak. So the dinosaurs lumber on.

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DaimlerChrysler

Goodbye, Dr Z

Sep 21st 2006 | DETROIT AND LONDON
From The Economist print edition

Chrysler joins General Motors and Ford in deep trouble

Reuters

Fired, sort of

NOT even appearing in adverts on American television as the jocular Dr Z, a mustachioed caricature of himself, enabled Dieter Zetsche to boost sales of Chrysler vehicles. The boss of DaimlerChrysler was forced to admit on September 19th that his efforts to turn the American carmaker around had stalled. Its mounting losses could cut the group's operating profits by €1 billion ($1.3 billion) this year.

America's third-biggest carmaker had started to convince people that it had turned the corner. After all, it was growing while its Detroit neighbours, General Motors (GM) and Ford, were having to close plants and lay off thousands of workers. (This week Ford said it would suspend its quarterly dividend and cut 14,000 salaried workers, rather than the 4,000 originally planned; it also emerged that Ford and GM even briefly considered an alliance.)

But earlier this year some in Motown began to suspect something was wrong: thousands of new, unsold Chrysler vehicles began to fill up car parks at the airport and other locations around the city. As fuel prices soared, unwanted people-carriers, pick-up trucks and sport-utility vehicles were piling up on dealers' forecourts. Such vehicles account for around 70% of Chrysler's sales, but consumers were suddenly reluctant to buy them because of their high fuel-consumption.

Chrysler's executives hoped that a big marketing push would clear the glut. Hence the $100m “Dr Z” campaign. But it didn't work, because GM and Ford also had vast numbers of similar unsold vehicles—and, being more desperate, offered bigger discounts. “Hope may not be the best basis for a management decision,” Mr Zetsche conceded this week. Chrysler is now cutting production by almost a quarter and readying new, more fuel-efficient vehicles for market. Fuel prices are now falling, but experts predict consumers will continue to be wary of big gas-guzzlers.

Mr Zetsche is a popular figure in Detroit, where he arrived in 2000 to sort out Chrysler, which had merged with Germany's Daimler-Benz in 1998. He undertook a huge restructuring, much like those now under way at GM and Ford. His success helped him win DaimlerChrysler's top job in July 2005.

With hindsight, Mr Zetsche's decision to appear in his firm's advertisements was itself a bad omen. Lee Iacocca, Jacques Nasser and Bill Ford all tried it too. While it is not unusual for American bosses to pitch their own products, it smacks of desperation. Yet Mr Zetsche, rather cleverly, did not really appear as himself—so he could sack his alter ego with impunity.

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European trucks

Roadblocks

Sep 21st 2006 | PARIS
From The Economist print edition

Will MAN take over Scania?

AFP

Not for sale

“WE WANTED the main shareholders' support for our bid,” says Hakan Samuelsson, the Swedish boss of MAN, a German truckmaker. He says his company has been talking to the biggest shareholders of Scania, its Swedish rival, for a couple of months about a friendly takeover of the company that employed him for 23 years before he joined MAN six years ago. But a leak to a press agency obliged him, he says, to choose between abandoning his plan and going ahead without the backing of Scania's main owners.

Mr Samuelsson's hostile move caused consternation at Scania. Over the weekend its nine-member board unanimously rejected his takeover proposal. Three members are representatives of Volkswagen (VW), a German carmaker and Scania's biggest shareholder with 18.7% of the capital and 34% of the votes. Two speak for Investor, a Swedish investment company controlled by the Wallenberg family, which controls 29% of the votes. On September 18th, when Mr Samuelsson launched a €9.6 billion ($12.2 billion) cash-and shares bid anyway, VW and Investor issued statements within hours to turn down MAN's offer.

MAN and Scania are a good match. Scania's strong brand, juicy margins and engine know-how make it one of the most attractive companies in the industry. The two firms have talked about co-operating in the development of gearboxes and axles, though the discussion ended acrimoniously. Scania's focus on heavy trucks would complement MAN's on lighter vehicles. Mr Samuelsson and several other former Scania managers who recently defected to MAN know Scania well. The combination would create the market leader in Europe, a strong firm in emerging markets and the global number three by sales.

Analysts have been predicting consolidation in the European market since the start of the year. Bigger is better: DaimlerChrysler Truck Group, the market leader by a large margin, and Volvo Trucks, the number two, are reaping the benefits of economies of scale in research and development (R&D), sourcing of components, marketing and distribution. This puts both in a strong position to weather a coming storm. The truck business is booming in most countries, but new carbon-emission standards in the North American Free Trade Area and stronger competition from Asian and Eastern European producers are likely to hit sales next year.

Mr Samuelsson is undeterred by the big shareholders' rejection. He is betting on winning over Investor with a better price and VW with a bigger stake in the merged company. Investor is unlikely to be keen on becoming a minority shareholder without multiple-voting rights in a Societas Europaea (SE), the European Union's newish form of company that Mr Samuelsson wants the merged firm to assume. Dual-class shares are common in Swedish companies, but do not exist in SEs. VW, meanwhile, could be tempted by an offer to incorporate its undersized truck business in Brazil, which would increase its stake in the new company.

Much depends on how he sweetens his offer, but Mr Samuelsson's strategy may well succeed unless an attractive rival bid emerges. Analysts at JPMorgan, an American investment bank, say that PACCAR, an American truckmaker, could afford a counterbid for Scania and might reap greater synergies than MAN. MAN says it will be saving some €500m a year, mainly in component sourcing, administration and R&D within the next three years. Even so, say JPMorgan's analysts, PACCAR will probably shy away from a bidding war.

Could Scania turn the tables and bid for MAN? The “Pac-Man” defence remains an option for Leif Ostling, Scania's boss for 17 years. Yet Mr Ostling is opposed not only to this merger but to any. He thinks Scania is better off on its own. Its smaller size, European focus and emphasis on heavy trucks have made it the most profitable company in its peer group with average margins of 9.4% over the past 15 years. In 1999 Mr Ostling fought hard against a hostile bid by Volvo, a Swedish carmaker, and won when the deal was blocked by the EU's antitrust watchdog. Three years ago he rejected a previous advance by MAN. This could be the trickiest—and possibly the last—battle of his time at Scania.

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Semiconductors

Buying time

Sep 21st 2006 | NEW YORK
From The Economist print edition

Freescale gets engaged, but continues to flirt with other suitors

IT WILL be less a love match than a marriage of convenience if the knot is eventually tied between Freescale Semiconductor, a chipmaking firm that used to be part of Motorola, and a consortium of private-equity firms led by the Blackstone Group. That, at least, is the obvious conclusion to draw from Freescale's insistence, as a condition of accepting the Blackstone club's $17.6 billion proposal, that it retain the right not only to say yes to any better offer that comes along within 50 days—but actively to solicit such a bid.

Such a “go shop” clause, which if exercised would leave Blackstone and its partners with only a break-up fee of $300m for consolation, is becoming more common in merger deals between public companies, as boards seek protection against shareholder allegations of a stitch-up. But they are unusual in private-equity deals.

Indeed, the Freescale example may have been the result of the firm's mishandling of two rival bidders. Its board was reportedly meeting to consider the offer by Blackstone, the Texas Pacific Group, the Carlyle Group and Permira Advisors when a rival bid came in. This was from a consortium led by Kohlberg Kravis Roberts (KKR), Bain Capital, Apax Partners and Silver Lake Partners, a pioneer in applying private-equity techniques to technology firms. By some accounts, the KKR consortium wanted Freescale to postpone its decision to allow it to do some due diligence, Blackstone threw a hissy fit, and Freescale decided to accept its offer but added the escape clause to keep KKR interested.

The KKR group apparently concluded that to fight on once a deal was done would break the private-equity industry's new clubby code. The big private-equity firms—most of which were involved in the Freescale battle—now hook up with so many different partners on different deals that Jack Welch, legendary former boss of General Electric, has described the consortia as “gang bangs”. Nobody wants to be excluded from the fun by falling out with the others. Reassuring noises have been heard from both sides that the two big beasts of private equity, KKR's Henry Kravis and Blackstone's Steve Schwarzman, have been talking amicably since the Freescale announcement, and that it is back to business as usual.

The Freescale deal is much the biggest technology acquisition by private-equity firms, dwarfing last year's $11.3 billion acquisition of SunGard Data Systems by a consortium led by Silver Lake that included both Blackstone and KKR. It is the strongest evidence yet that private-equity firms regard the fast-maturing technology sector as ripe for the application of their standard techniques. These include borrowing heavily against cashflows that are viewed as more predictable today than in tech's high-growth years. Many tech firms are seen as potential targets; some private-equity folk are even starting to gaze dreamily at Microsoft's cash mountain, though the software giant will surely remain out of reach.

Semiconductors have become a test of the ability of private-equity firms to transform an industry. In the past five years there have been more than 50 private-equity acquisitions of semiconductor firms, according to Venture Economics, a research firm. As well as increasing leverage, private-equity firms are trying to consolidate an industry with plenty of excess capacity. The KKR consortium recently bought the semiconductor business of Philips, a Dutch conglomerate, which could have been combined with Freescale. But the only other industry in which private-equity firms have led consolidation is cinemas, an experience which did not end happily, cautions Josh Lerner of Harvard Business School.

Ironically, only two months ago, to mark the second anniversary of its initial public offering, Freescale circulated a long list of its achievements. Two years as a public company, it said, had resulted in stronger financial performance, more innovation, greater intimacy in its relationships with customers, and substantial progress in a long-term cultural transition from a slow, methodical in-house semiconductor

unit to a fearless, energetic and self-sufficient business. Being an independent public company may be better than being part of an unwieldy conglomerate. But today, it seems, nothing beats falling into the arms of whichever group of private-equity gang-bangers is willing to pay the highest price.

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Cluster analysis

Blame it on the typewriter

Sep 21st 2006 | AUSTIN
From The Economist print edition

How the Texan capital became a high-tech hub

HAD it not been for the humble typewriter, Austin might have been all politics and football, and no venture capital. In 1967 IBM opened a plant in the city to make Selectric typewriters. It then moved on to mainframe circuit-boards and terminals and eventually to personal computers. Other technology outfits sprung up in IBM's shadow. Texas Instruments (TI) arrived in 1969 and Sematech and MCC, two industry research consortia, during the 1980s. Michael Dell founded his PC-making firm in 1984 while a student at the University of Texas at Austin. Over 2,000 other technology firms set up shop in Austin during the 1990s.

Today “Silicon Hills” is a huge hub for the semiconductor industry. Besides Freescale and TI, Advanced Micro Devices (AMD) designs chips in Austin and Spansion, its recent spin-off, manufactures flash-memory cards. Samsung, the South Korean electronics giant, has recently broken ground to build the largest semiconductor factory in America. The plant, Samsung's second facility in Austin, will cost $3.5 billion.

Austin's charms are not confined to critical mass and a bit of luck. Newcomers hail the quality of life. Median home prices are $177,000—about a quarter of the amount in San Jose ($748,000), a rival tech hub—with the bonus that Texas has no state income tax. The city's start-ups draw strength from a counter-cultural vibe: the local slogan is “Keep Austin Weird”, and the city is the self-styled “live music capital of the world”, hosting two big music festivals each year.

Can Austin hold its own? The city got walloped by the tech crash in 2001. Venture-capital funding has shrivelled to about a quarter of what it was in 2000 and took longer to recover than in other parts of America. Things are now picking up, but initial public offerings, as elsewhere, remain sparse. Austin faces other challenges, too. Despite having an excellent crop of computer geeks produced by the University of Texas at Austin, venture types fret that the city lacks managers to run its myriad spin-offs.

Meanwhile, the city is branching out from semiconductors. A green-technology industry is budding—rivalled by Denver, Boston and, of course, California. Digital media—especially online video-gaming—is taking hold too, as is wireless technology. It is a far cry from the typewriters that started it all.

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Recruitment

Apply within

Sep 21st 2006 | HONG KONG
From The Economist print edition

China's recruitment market is booming

HAS there ever been a better time or place to be an executive recruiter than today in China? Korn/Ferry, a big recruitment firm, says its business in China is up by half over the past year. A more specialised recruiter in financial services says he is too busy even to estimate how much things have improved since the grim period a few years ago when financial markets were reeling and SARS was driving people away. China's extraordinary growth has made it among the most desirable postings for ambitious executives. At the same time, companies are hungry for talented people, according to a new survey of 144 Korn/Ferry recruiters.

Those with fluency in Mandarin and lengthy experience in Western companies are most sought after—multinationals want such employees for obvious reasons, but Chinese companies want them too, to improve methods, institute modern corporate governance, and—particularly for state-owned or formerly state-owned companies—give at least the appearance of being global.

All told, it would seem to be a worker's paradise, at least for high-level (and highly compensated) workers. There is, however, another side to the Korn/Ferry survey. China is, according to the recruiters polled, a particularly easy and common place to fail. Several prominent non-Chinese executives hired at big companies such as the Bank of China, Shenzhen Development Bank and Jin Jiang Hotels over the past two years have quietly departed—and they are, apparently, just the tip of the iceberg.

According to David Everhart, a senior partner at Korn/Ferry, failures spring from several distinct causes. One big problem is that hiring executives to instil a new corporate culture is easier said than done. It is hard enough to hire foreigners who will fit in with an existing Chinese company, let alone change it. In Chinese firms, particularly state-owned ones, managerial effectiveness often has more to do with long-standing relationships than strict performance measurements.

In many of these vast companies it is questionable whether an expatriate can ever fit in, though there are exceptions, notably Lenovo, which bought IBM's PC division, and CNOOC, a big oil company. Managing Chinese employees can be particularly complex because older ones who have been with state-owned companies tend to lack initiative, while the younger ones have so much initiative that they can be hard to restrain.

For people hired from overseas, the single largest reason for failure is the inability of their families, particularly non-working “trailing spouses”, to adjust to living conditions, says Mr Everhart. This is especially true for companies that have built operations in rural areas of China, far from big cities. Demands on executives in China that are strictly tied to business, but nonetheless essential, can be tough as well. Obtaining approvals and coping with time-consuming and disruptive restrictions on travel can be a huge distraction, as can the political demands of meeting with various officials—at their convenience.

All this turnover can be wonderful for recruiters, of course. Many people, Korn/Ferry has concluded, are simply not cut out for dealing with a new and complex foreign culture. As a result, Mr Everhart says, over the longer term, the most successful “human capital” firms will be those that focus on helping Chinese companies take a rigorous, merit-oriented approach to developing their own executives—a process that is just in its infancy. For everyone else, today's recruitment boom may soon be recalled with fond nostalgia.

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Fast food in America

Sizzling

Sep 21st 2006 | AUSTIN
From The Economist print edition

Why America's restaurant chains are on the menu for investors

LOVE it or loathe it, even middle America's smallest cities have a Strip: a blaze of neon signs leading towards the centre of town. There are petrol stations and motels, but mostly there is food. And the variety is staggering. Twenty years ago the usual suspects—McDonald's, Burger King, Kentucky Fried Chicken and a few others—dominated the field. Burgers and tacos are still staples, but today's hungry drivers have many more choices, from Whataburger and Taco Cabana to Quizno's Subs.

Americans now spend 48% of their food money on eating out, up from 25% in 1955, according to industry figures. Investors are also hungry for fast food, judging by the rate at which the chains are changing hands. Mark Saltzgaber, an industry analyst based in San Francisco, says that 2005 and 2006 have been “without a doubt the most active restaurant M&A environment that we've ever seen”. Private-equity groups have been buying up fast-food chains and several have been flipped back on to the public markets.

Chipotle, a burrito chain spun off from McDonald's, went public in January; Wendy's floated a stake in Tim Hortons, a Canadian coffee-and-doughnut chain, in March (it will complete the spin-off next week); and Goldman Sachs, Bain Capital and Texas Pacific Group took Burger King (BK) public in May, four years after a leveraged buy-out. This spring three private-equity groups completed their purchase of Dunkin' Brands, the firm behind Dunkin' Donuts and Baskin-Robbins.

More is to come. El Pollo Loco, a Southern California chicken chain, filed for an initial public offering (IPO) in May, less than a year after being bought by Trimaran Capital Partners, a New York-based private-equity group. Wendy's is exploring “strategic alternatives” for Baja Fresh, a Mexican-food chain it bought in 2002. And this month Krystal, a chain with over 400 stores which claims to be the “oldest fast-food chain in the South”, said it was up for sale. “The last couple of years in the restaurant space has been as good a time as ever to sell,” says Mr Saltzgaber.

Private-equity firms are greedily buying, their appetites whetted by this year's lucrative stockmarket listings. They like fast-food chains' solid cashflows, relative immunity from business cycles and reliance on franchises, which means they require less capital. BK's private-equity firms, which paid $1.5 billion for the chain in 2002, took a $367m dividend a few months before the flotation, plus stakes worth $1.8 billion in the listed company.

Why are the chains selling? Many have decided to focus on their core brands. Wendy's chose to spin off fast-growing Tim Hortons after realising that “Tim's was beginning to compete directly with Wendy's,” says John Barker of Wendy's. Others are selling to exploit high prices and pay down debt, or because restaurants do not fit into their strategies. BK was sold by Diageo, a European drinks firm.

BK provides a cautionary tale for market investors, since the huge sums extracted by private-equity firms left it heavy with debt. They bought the chain at a bargain price—about $800m less than Diageo wanted to sell it for. Its management was in chaos—the firm has now had 11 chief executives since 1989. The new owners boosted sales, launched new products and improved franchise relationships. But announcing its first results as a public company last month, BK reported a fourth-quarter loss, which it blamed in part on yet another payout to its private-equity masters of $30m. Its shares fell 13%, and are now trading well below the listing price.

Analysts believe the deals will carry on while fast-food chains continue to prosper. They are growing at the expense of higher-priced, sit-down “casual dining” chains: last month sales were up 4.7% at Wendy's and 3.5% at McDonald's, helping to propel its share price to a six-year high.

Fast-food chains are also broadening their range; breakfast is seen as having lots of growth potential, and BK and Dunkin' Donuts have both introduced omelettes. Even America's obsession with organic food is catered to. McDonald's serves organic coffee in New England and Chipotle offers burritos with organic beans and “sustainably raised” pork. With its mixture of cut-throat competition, frantic dealmaking and instant gratification, fast food, it seems, is more American than apple pie.

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Face value

China's pied piper

Sep 21st 2006
From The Economist print edition

Reuters

Jack Ma is attracting a following among entrepreneurs in China and internet companies worldwide

ON A rainy weekend this month 10,000 businessmen, hobby traders and “netheads” gathered in Hangzhou, a pretty Chinese city near Shanghai, to talk about e-commerce. Most went to meet and swap tips with other online traders. All came to the “Alifest” to sit at the feet of Jack Ma, a pixie-sized, boyish 42-year-old who is the founder of Alibaba, an e-commerce firm, and is regarded as the godfather of the internet in China. In a country where businessmen are viewed with suspicion, his popularity is unusual. When he was invited recently to speak in Beijing's Great Hall of the People, Mr Ma needed six bodyguards to escape a mob of online traders waiting outside to give him a hug.

Mr Ma's rock-star status reflects how he has enabled thousands of his countrymen to become their own bosses, build businesses and make money—a dream ingrained in Chinese culture but repressed by decades of Communist antipathy to private enterprise. Alibaba has become the world's largest online business-to-business (B2B) marketplace, Asia's most popular online auction site and, as a result of its acquisition of Yahoo! China, the 12th most popular website in the world. That combination makes Alibaba one of the few credible challengers to the global online elite of Google, eBay, Yahoo! and Amazon.

Alibaba is far from being just a Chinese knock-off of these American giants. Indeed, they have borrowed ideas from him. “Jack is not just a Chinese visionary, but a global one. Western companies are taking pages from the Alibaba book,” says Bob Peck, an analyst at Bear Stearns. At Alibaba's heart sit two B2B websites (alibaba.com and china.alibaba.com), one a marketplace for firms from across the world to trade in English, the other a domestic Chinese service. Rival e-commerce outfits, such as America's Ariba and Commerce One, sought to cut multinationals' procurement costs. In contrast, Alibaba's intention was to build markets for China's vast number of small and medium-sized enterprises, which make everything from cufflinks to motorcycles, by allowing them to trade with each other and linking them to global supply chains. Today, traders in America buy from Alibaba and resell on eBay.

Mr Ma has also led the charge into online communities and social networking, both now booming areas. In 2003 he added a consumer auction site, Taobao, that allowed instant-messaging—a feature later added to his business sites. In contrast with eBay's relative anonymity, Taobao lets buyers and sellers get chummy through messaging and voicemail, and by posting photographs and personal details on the site. Turning e-commerce into a community of “friends” has been critical in a country beset by a lack of

trust. And with 70% of China's web users aged under 30, Taobao's informal, blog-like format struck a chord—attracting more than 20m users. Many have now gone professional, buying goods wholesale on Alibaba and reselling them on Taobao. The story goes that, shortly after visiting Alibaba's offices and seeing Taobao, Meg Whitman, eBay's boss, bought Skype, an internet-telephony start-up, for its instant-messaging.

Alibaba has also outflanked the opposition in online payments. Aware that most Chinese do not have credit cards, Mr Ma introduced AliPay, a system that keeps cash in escrow until goods arrive. That trick for getting round settlement risk was later adopted in China by eBay. China's powerful banking regulator has a hawkish eye on AliPay, which is, in effect, an online bank with thousands of credit histories (something mainland banks crave). Taobao's success has been startling. Its market share jumped from 8% to 59% between 2003 and 2005, while eBay China's slid from 79% to 36%. Mr Ma trumpets that it is “game over” for eBay China. Many industry watchers expect eBay to retreat and sell out to a local outfit such as Tencent (a rising star in auctions) or Alibaba itself—as Yahoo! China did.

Mr Ma is also at the forefront of the trend to integrate paid search with e-commerce. Alibaba's takeover of Yahoo! China last October gave the firm a search engine just as Google was demonstrating the huge potential of paid search, and the deal anticipated eBay's link-ups with portals (Yahoo! in America, and Google elsewhere). Baidu, China's main search engine, is a strong rival. But online advertising is surging in China and small firms are the biggest users of paid search, giving Alibaba an edge.

Keep it simple

Mr Ma seldom mentions technology. Whereas most internet entrepreneurs are geeks (think of Yahoo!'s or Google's founders), Mr Ma first touched a computer in 1995 on a trip to Seattle. “Someone as dumb as me should be able to use technology,” he says. He insists on simplicity. A new feature is rejected unless he can understand and use it. Mr Ma's approach to running the company is similarly independent. He reads neither business books nor case studies, and ascribes Alibaba's survival and success to the fact that he “knew nothing about technology, we didn't have a plan and we didn't have any money.” In truth, Mr Ma had powerful backers early on, including Goldman Sachs and Softbank. Yahoo!'s Jerry Yang—who joined Mr Ma at the Alifest—is also a longtime friend. In any case, he has money aplenty today: as part of its takeover by Alibaba, Yahoo! paid $1 billion for a 40% stake in the company.

Only one thing is missing: profits. As the boss of a private company in no rush to join the stockmarket, Mr Ma is relaxed. Revenues should double to more than $200m this year. But Alibaba has so far pursued market share rather than revenue. The global business site charges its users, but Taobao does not; an attempt to do so this year failed. Mr Ma says it is too early: only 30m of China's 120m online users have bought anything online. He wants to help the market grow—creating 1m jobs in China in the next three years—not stifle it with charges. He will have to tackle profitability if he is really to call the tune.

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The credit markets

In the shadows of debt

Sep 21st 2006
From The Economist print edition

Business is being reshaped by a massive borrowing binge, but much of it is unseen, unregulated and little understood

IN THE mid-1990s Spain's “King of Bricks”, the construction magnate Rafael del Pino, received a most unusual commission. His company, Ferrovial, was hired to work with Frank Gehry, a Los Angeles-based architect, to build a work of art: Bilbao's stunning titanium-skinned Guggenheim Museum, which dapples the waters of the Nervión river.

Mr Gehry, with his shock of Einstein-white hair, was a stickler for detail. No two parts of the 24,000 square metre (258,000 square foot) leviathan could be the same—or even symmetrical. The museum's cavernous halls would embrace one of Bilbao's gritty industrial-era bridges. And it had to project a sense of peace, an image the Basque authorities badly needed to send to the world.

Less than a decade later, Ferrovial, flush with the success of its Basque masterpiece, is engaged in engineering wizardry of a different sort—finance. This summer it obtained huge, privately issued loans to buy control of BAA, the world's largest airports operator and owner of London's Heathrow, Gatwick and Stansted airports. Though Ferrovial was much smaller than BAA, the consortium it led beat buy-out specialists, such as Goldman Sachs. Of the £16.4 billion ($30 billion) it paid for BAA, more than half was borrowed.

Ferrovial is among a growing number of companies exploiting a sophisticated grasp of the debt markets to make acquisitions that only a few years ago would have seemed impossible. “The market has changed,” says Richard Bartlett of Royal Bank of Scotland, one of Ferrovial's main creditors. “Twelve or 24 months ago this would have been a very challenging deal to pull off.”

Indeed, the market has changed so fast that regulators are not sure if it is spinning out of control. On one hand, innovations in the credit markets have helped to provide a remarkable period of stability in the world's financial system. In recent years, markets have lived through the end of the internet bubble, the collapse of Enron, the terror attacks of September 11th 2001, debt downgrades in the car industry and a stampede out of risky assets in May and June. Any one of these might once have triggered a financial crisis. But none did.

Cheap and liquid financing has enabled companies to make more efficient use of their balance sheets,

potentially boosting returns to shareholders and allowing managers to concentrate on profits and cashflow. Despite the increased lending, banks have increased the cushions of capital that they rely on to be a safeguard.

On the other hand, as the debt and derivatives markets have grown out of all recognition, they have moved increasingly into the shadows. Regulators worry that some of the complex financial instruments conjured up around the lending and borrowing of money—worth trillions of dollars—may sow the seeds of the next financial crisis.

The credit markets are the motor for three of the big trends of the decade and some people find them unsettling. First, companies are raising more and more capital through privately issued loan instruments, as opposed to public equity—such as selling stocks or issuing bonds, which can be openly traded. Private deals are harder for regulators and ordinary investors to keep tabs on.

Second, the lending is increasingly being orchestrated from outside the regulated banking industry, by hedge funds and other credit investors that are often supervised only indirectly, if at all. These are especially big in the booming market for credit derivatives, which are also traded outside public exchanges.

Third, although some of this capital is available to public companies, such as Ferrovial, most of it is being gobbled up by leveraged buy-out firms, which use the money to buy public companies and remove them from the stockmarket.

Central bankers and supervisors increasingly worry about the risks to financial stability that may be lurking in the complex debt instruments dreamt up by the finance industry. One of their biggest concerns is how much danger there may be to regulated banks from the faceless institutions they now do much of their debt trading with: hedge funds.

Regulators are beginning to ask themselves whether hedge funds are adequately monitored through the supervision of the banking industry. Pressure is growing on the banks to deal sensibly with their trading counterparties. Equally, some question whether over-zealous supervision may have had the perverse consequence of driving business and finance away from the public eye.

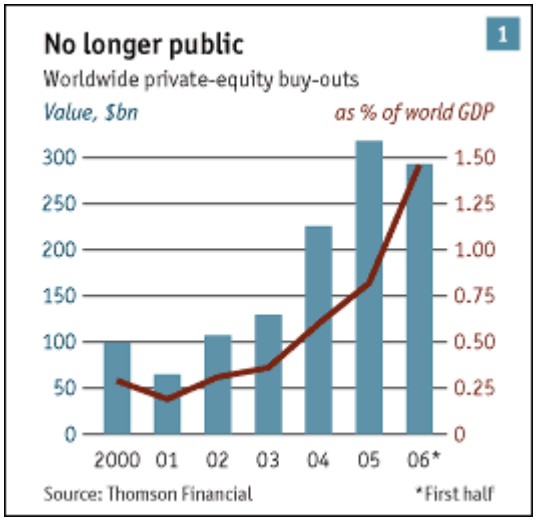
At the forefront of concerned regulators is Timothy Geithner, president of the Federal Reserve Bank of New York and one of the financial world's most powerful voices. In a speech in Hong Kong on September 14th, Mr Geithner praised the banking industry for becoming more robust, overseeing growth in the number and size of lending firms and innovating in credit instruments. These, he said, had “strengthened the efficiency and resiliency of the overall financial system.”

But he gave warning: “The same factors that may have reduced the probability of future systemic events, however, may amplify the damage caused by, and complicate the management of, very severe financial shocks. The changes that have reduced the vulnerability of the system to smaller shocks may have increased the severity of the larger ones.”

For most regulators, the safest thing you can have to protect against such shocks is liquidity, and this has been abundant for years. But as the old adage goes, a banker is someone who lends you an umbrella when it is sunny and asks for it back when it starts to rain. Liquidity in the debt markets has an annoying habit of disappearing just when you most need it.

The main drivers of innovation in the debt markets have been the buy-out specialists. The private-equity firms seized on cheap credit to buy $300 billion of businesses in the first half of the year (see chart 1). If they carry on at that pace, they could theoretically beg and borrow enough money in 2006 to buy almost a fifth of all companies listed on America's NASDAQ, or nearly a quarter of Britain's FTSE 100. Citigroup, one of the cheerleaders of the borrowing boom, says buy-outs, foreign takeovers and debt-funded share buybacks have removed shares from stockmarkets, especially in Britain, faster than companies could issue them. The decline is still small and you can argue over which shares should count in the calculation, but Citigroup says this year is the first in more than 20 years that European stockmarkets have shrunk in this way.

Even companies avoiding the acquisition trail have raised borrowing levels to buy back shares—if only to keep private-equity groups at bay. Such buybacks surged to $117 billion in the second quarter, according to the Bank for International Settlements, compared with a quarterly average of $87 billion last year. Such is the extent of “shareholder enhancements”—share-boosting measures that increase debt on the balance sheet—that irate bondholders have begun to fight back. Activist shareholders are now competing against activist bondholders.



Egging borrowers on are bankers, who sometimes admit to lending amounts, as a multiple of underlying cashflows, that are against their better judgment. This, they say, is partly because the competition to provide credit is so fierce, however cheap it is. Since 2003, the after-tax cost of raising debt has been much lower than the cost of issuing shares, even in the more expensive high-yield market (see chart 2).

No longer do banks have a cosy monopoly on finance. Years of low interest rates and abundant liquidity have led investors to pursue higher-yielding assets, even if that means taking on greater risk. This means new firms, such as hedge funds, have flocked into the loan market, where they can super-size yields by investing in tranches of debt with a higher risk of default, and by borrowing from banks to buy those loans.

Also, the desire of pension-fund managers to buy long-term assets to match their payout commitments has led them into most parts of the credit market. Mutual funds and insurers have flocked in to diversify their portfolios and to spice up their returns.

According to Standard & Poor's Leveraged Commentary and Data, a part of the rating agency that tracks the loan market, credit-investment institutions backed by pension funds, mutual funds and insurance companies have mushroomed in recent years, replacing banks in loan-syndication deals.

In America they bought two-thirds of all leveraged loans issued in the first half of this year, up from 45% seven years ago. In Europe the growth has been stronger still. It had just three such institutions in 1999, a tiny share of the loan-syndication market. At the end of June there were 76, or 45%, of a much bigger market. This slice of the business has been seized from banks.

Credit where credit is due

Partly thanks to the shared risk, record-breaking deals have been done with hardly a hitch. Ferrovial's acquisition, which had many of the characteristics of a leveraged buy-out, came close to the size of the largest buy-out to be agreed ever (in nominal terms)—that of HCA, an American health-care provider. It agreed to be bought earlier this year by a team of private-equity groups for $33 billion.

Though interest rates and debt have both risen around the world, this has not yet led to more defaults. Rating agencies have lowered their projected default rates for several years; Moody's Investors Service says only 12 firms that it follows have defaulted this year, compared with 19 in the same period in 2005. The dollar volume of defaults is also much lower. That is partly why in the markets for corporate debt, the interest rates at which companies can borrow are almost as low as they have ever been, according to Citigroup.

Even when companies have run into trouble, the debt markets have just hiccuped and soldiered on. In May 2005 the bonds of the two largest and most actively traded issuers in the market, General Motors and Ford, were downgraded to “junk” status as the risk of default increased, leading to fears of a meltdown in the credit markets. But far from drying up, junk bond issues increased to more than $120 billion in 2005, nearly twice as much as in the depths of the lending drought after the telecoms crash in

2002. Such is the staying power of the market that CreditSights, a consultancy, wondered this summer whether it was fair to call high-yield bonds “junk” after all.

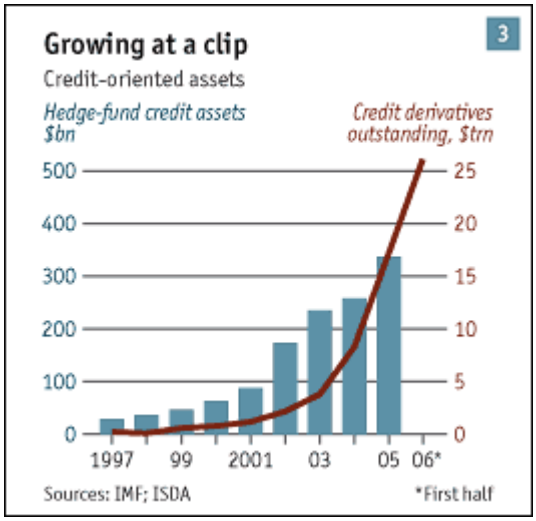
These rated corporate bonds—whether junk or not—used to be the height of sophistication. In the days of Michael Milken and Drexel Burnham Lambert in the 1980s, junk bonds helped reshape and modernise corporate America, no matter how unpopular they were at the time. But now they are being eclipsed by privately arranged loan transactions, especially “leveraged finance” (which carries a similar risk to junk bonds, but involves loans that are not publicly traded).

Leveraged finance is growing fast. According to Merrill Lynch, the leveraged-loan market in Europe is already larger than the junk-bond market—which, admittedly, was not very deep in the first place. In America the issuance of leveraged loans is growing much faster than high-yield bonds, though the overall amounts are still smaller. The debt includes second-lien loans, which have a floating rate and give creditors lower levels of security, but potentially higher returns. In the riskiest end of the credit spectrum are mezzanine finance and payment-in-kind notes. A bit like the more toxic end of mortgage finance, nobody knows how liquid they will be when the credit cycle turns.

On a global scale, the vast syndicated-loan market, including leveraged finance and more senior debt, is also growing more swiftly than public bond and share markets. Dealogic, a data provider, says global share issuance last year was a bit less than at its peak in 2000, at almost $600 billion and corporate-bond issuance was a bit higher than in 2000, at $685 billion. Loan volumes, meanwhile, soared from $2.3 trillion to $3.5 trillion over the same period.

More febrile still has been the popularity of newfangled derivatives with difficult names, such as credit-default swaps (CDSs). These are as complex as they sound. But they are also among the past decade's most important financial innovations—and a cause of both regulatory hand-clapping and hand-wringing. The International Swaps and Derivatives Association said on September 19th that the notional amount outstanding of credit derivatives rose by 52% in the first six months of the year to $26 trillion (see chart 3). That number would be far smaller if banks' positions were netted out for offsetting exposures. But less than a decade ago, the credit-swaps market barely existed.

Credit derivatives, which behave a bit like insurance contracts, allow investors to buy or sell cover against default by a borrower, and the price moves depending on perceptions about the borrower's creditworthiness. Increasingly, they are being pooled into collateralised debt obligations (CDOs), another form of investment vehicle that is growing as fast as a hedge-fund manager's bank balance.



Such products, known as “structured credit”, encourage liquidity, partly because they can be created out of thin air. They also allow banks to sell on the risk of loans turning bad, possibly enabling them to lend more. Robert McAdie, head of credit research at Barclays Capital, says the change has been profound—and for the better. After the dotcom boom, when heavily indebted telecoms firms were on their knees, banks had almost no way to hedge themselves. Now they do: “The use of credit derivatives has totally liberalised the debt market,” he says. “It has created an enormous shift in the risk profile of banks. It allows them to hedge against their risk and manage their regulatory and economic capital more efficiently.”

Hedges and hedge funds

On the other hand, a recent paper by researchers at the European Central Bank says part of the problem with CDSs is that they are used for speculation, as well as hedging. “We have introduced a new product, “insurance”, that appears to be used by people not looking for insurance. It is not the instrument[s] which [are] causing liquidity concerns but the way market participants may be using them.”

On September 11th, in its semi-annual Global Financial Stability Report, the IMF warned that such “structured credit products” were one of its main concerns, especially if financial markets take a turn for the worse and liquidity dries up.

The problem, broadly identified by many regulators, is that not a lot is known about how structured-credit products behave in unusual conditions. Even if they normally mitigate risks, they might suddenly magnify them when financial conditions seriously deteriorate. The products have been developed in a decade when interest rates have been low, the appetite for risk high and liquidity ample. It is easy to assume they are always a benign influence. But it is hard to know how they will react when hard times return.

Mr Geithner, whose role at the New York Fed makes him supervisor-in-chief of Wall Street, appears to take them particularly seriously. In his speech he said that leveraged firms trading credit instruments may well improve liquidity, pricing and diversification opportunities for investors, which should lead to lower risk and ultimately cheaper capital.

But there were problems monitoring the positions taken by firms, he added, which may pose risks to financial stability. Banks, for example, may not fully understand all the positions of a hedge-fund counterparty before lending to it, he said; hedge funds are not required to give this information publicly. Banks can model future risks, but reasonable people differ widely on where those risks lie. And policies to reduce the risks of failure at banks may cause moral hazard if they dull the incentive of individual firms to police their lending criteria.

Mr Geithner encouraged banks to deepen the margin cushion they extend to counterparties and sort out back-office processing of credit-derivative trades as short-term ways to shore up the system. He hinted that regulators might have to supervise large hedge funds directly, rather than indirectly, through banks.

But more scrutiny can be a double-edged sword. Some argue that the regulatory climate is partly what first drove public firms into private hands, encouraged the brightest bank employees to move to hedge funds, and spurred companies to borrow privately.

According to Jonathan Macey, a professor at the Yale Law School, the people who such regulation is supposed to benefit—ordinary, non-professional investors—are those most likely to miss out from the trend to raise capital privately. Of course, they can always take part via their pension funds—though that will be little comfort if the credit cycle ever becomes a crunch.

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Hedge funds

Flare-up

Sep 21st 2006 | LONDON AND NEW YORK
From The Economist print edition

The Image Bank

Banks scramble to assess their positions after a hedge fund makes bad bets on natural gas

Get article background

CALGARY, Alberta and Greenwich, Connecticut might be expected to mix about as well as oil and (sparkling) water. Calgary, which has boomed in recent years on the back of oil money, in its soul remains a cow town. Greenwich, a leafy suburb of New York, is anything but. The only herding done there recently is by the hedge funds that call it home following the latest investment fad.

It was one of those fashions—the seductive commodities boom—that rocked Calgary, Greenwich and the wider financial world this week. A young, though by no means junior, energy trader in Calgary made some very big bets on natural-gas prices that went spectacularly wrong. They have cost his employer, a Greenwich-based hedge fund called Amaranth Advisors, $6 billion since August 30th. That is more than half of what not long before was $9 billion it had under management.

In a letter to investors on September 20th, Amaranth reportedly said its losses this month alone could reach 65% of its funds. Withdrawal by investors—not to mention a possible exodus by managers deprived of their bonuses—are likely to hurt it more. The fund could be wound up if a buyer is not found.

Meanwhile, investors in America and abroad—including the sort of pension funds that have recently stocked up on their hedge-fund investments—are smarting. The pension fund at 3M, an American manufacturer, and the San Diego County employees' retirement fund were among those exposed to Amaranth. Funds of hedge funds run by Goldman Sachs and MAN Group expect to see losses of 2% to 3% as a result of its troubles. Funds run by Credit Suisse and Morgan Stanley were also hit. Meanwhile, investment banks have been assessing their losses as a result of lending to Amaranth through their prime-brokerage arms.

Yet unlike the panic after the 1998 collapse of Long-Term Capital Management (LTCM), the biggest hedge fund ever to blow up, the Amaranth case has thus far been met with general calm. Christopher Cox, head of America's Securities and Exchange Commission, said this week the incident was a reminder that hedge funds are not for all investors. But financial markets took it in their stride.

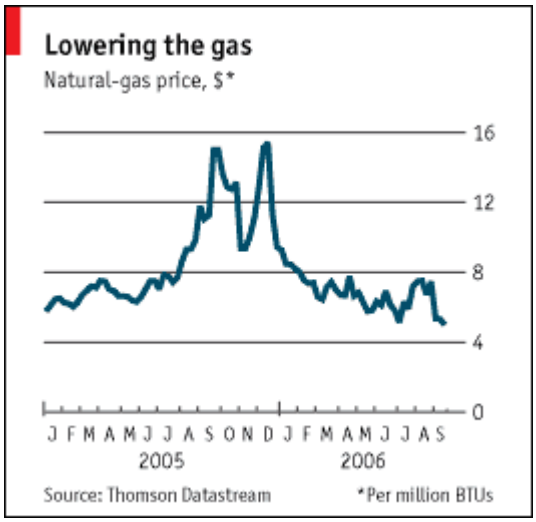
How did it happen? Brian Hunter, the 32-year-old Canadian energy trader, had made a fortune for Amaranth in 2005 when he bet that natural-gas futures would rise and then benefited from surging gas

prices after Hurricane Katrina. Last year *Trader Monthly* ranked him the 29th highest-earning member of his profession, estimating his annual income at $75m to $100m. He was named head of Amaranth's energy-trading operations in the spring. This summer no big storms materialised and the same sort of positions—highly leveraged and insufficiently hedged, analysts say—left the fund exposed to falling prices. Natural-gas futures prices have dropped by two-thirds in the past nine months (see chart).

“I've never seen a hedge fund so highly leveraged in energy,” says Peter Fusaro of the Energy Hedge Fund Centre. He reckons that the fund held about 10% of the global market in natural-gas futures. “Somebody was not monitoring this correctly.”

As its losses mounted, last weekend Amaranth quietly summoned a group of investment banks to its Connecticut headquarters to try to sort out the financial mess. With teams from each firm ensconced in separate rooms, officials from Amaranth shuttled between them, seeking to sell off positions, craft bridging loans and possibly negotiate a takeover. By the end of the weekend, enough had been done to prevent panic. Unlike at LTCM, the Federal Reserve did not have to intervene. To help cover its losses, Amaranth also sold a big chunk of its leveraged loans. They were snapped up, mostly by buyers in Europe.

On September 20th, Amaranth said it had reached agreement to transfer its energy portfolio to JPMorgan Chase (also a futures-clearing broker for the fund) and Citadel, a Chicago-based hedge fund. That is ironic, since Citadel lost a fortune by short-selling natural gas last year and is still rebuilding its gas-trading business



Amaranth is not the first hedge fund to suffer from the wild swings in natural-gas prices in recent months. In August a smaller fund called MotherRock collapsed after big losses; it had been run by Robert Collins, a former head of the New York Mercantile Exchange.

Mr Fusaro reckons that hedge funds have $67.4 billion invested in the energy sector, up from $30 billion two years ago. They still account for a tiny share of the $7 trillion global energy market, but the combination of volatility in energy markets and the growing pool of investment in them means an increasing number of investors are exposed.

Also, banks and brokers will have to assess how prudently they are lending to their high-rolling clients, and whether they are calculating the risks well enough. “A lot of people are going to be looking at their energy exposures”, says Kate Hollis of Standard & Poor's, a rating agency. “When the markets wobble, everyone feels it.”

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Chinese brokerages

Hitting a wall

Sep 21st 2006 | HONG KONG
From The Economist print edition

China's ban on foreign brokerages hurts its own capital markets

THE world's investment bankers should be used to Chinese walls, but not quite like this. On September 14th China's stockmarket regulator made official a long-rumoured ban on foreign acquisitions of domestic stockbrokers and investment banks—which many of their international rivals are keen to snap up. The China Securities Regulatory Commission (CSRC) declared it was suspending approval of new brokers, brokerage joint ventures and new branches. Shang Fulin, the agency's boss, hinted that the suspension would stay in force until at least October 2007.

That leaves Wall Street's finest high and dry. Only two bulge-bracket firms have any sort of position in the mainland's domestic securities markets. Goldman Sachs won approval in 2004 to set up a new broker, Gao Hua Securities, in a complicated (and probably unique) deal with Fang Fenglei, a maverick local banker. Switzerland's UBS says it is on track to take a fifth of Beijing Securities, one of the largest Chinese brokers, though is awaiting final approval. By contrast, Merrill Lynch, Credit Suisse, Morgan Stanley, Citigroup and JPMorgan Chase are still lining up for an entry. Even with no ban, red tape meant foreign approvals were glacial—two deals granted in three years—somewhat undermining the CSRC's claim that foreigners were rushing in.

Still, there is a reason for their patience. The scope for underwriting and trading Chinese equities and bonds and advising on domestic flotations and mergers (see article) could be big—with fees reaching $12 billion by 2010. The CSRC's Mr Shang, a conservative, argues that the spoils should accrue to homegrown firms. He claims the ban gives the industry a chance to clean its house before opening to foreign competition. Under World Trade Organisation rules, from December China is supposed to allow foreign investors to raise their stakes in local brokers from 33% to 49%. But the CSRC wants to force enough consolidation to create a few national heavyweights able to survive foreign encroachment.

This reasoning is foolish and an excuse for home-grown protectionism, says Fraser Howie, author of an authoritative book on China's stockmarkets. It is another sign of an economic nationalism now widely gripping the mainland. Most of China's 100-odd securities firms are in dire shape. “The industry is basically bankrupt. It has no investment bankers to speak of and no real research. Shutting out foreigners makes it less, not more, competitive,” says Mr Howie. A recent revival in the domestic stockmarket—up 60% from its low last December with double the volume of traded shares—means that after years of heavy losses, many brokers are now making money and do not want to share it with foreigners. But the CSRC's hope that an equities boom will bail out the industry without the need for hard reform will prove vain. Some brokers are downright corrupt. In many the products, management and technology are outdated. They need foreign capital and expertise—from which other industries in China have already profited.

What makes the CSRC's recalcitrance doubly hard to understand is that the ban undermines its own goal of developing China's capital markets. Most Chinese companies coming to the market are not keen on a domestic listing. Many more might be if its domestic securities industry were more robust. Mr Howie counts around 1,750 China-based companies listed on nine exchanges around the world (from New York to Sydney), worth $1.7 trillion collectively. Most of the best are listed exclusively in Hong Kong—preventing mainland investors from owning them and its brokers from underwriting and trading their shares.

It is the big foreign investment banks that are winning those international mandates and turning a handsome profit from their China business. If it allowed these sophisticated operators to help rationalise China's securities industry, the CSRC would not only be doing its job of developing mainland markets. It might also entice the best of its corporate crop to return home.

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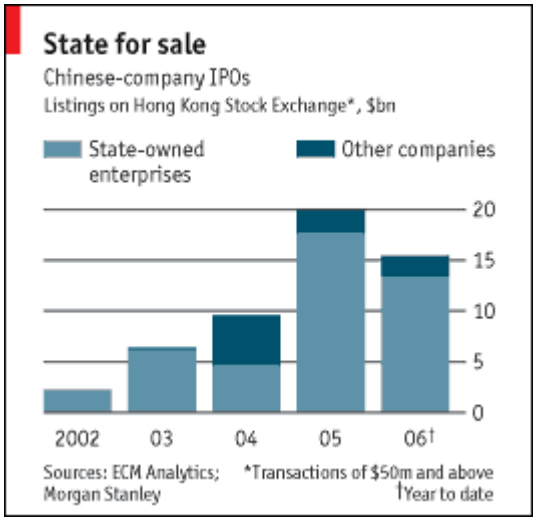
Chinese public offerings

Selling the family China

Sep 21st 2006 | HONG KONG
From The Economist print edition

The booming supply of new Chinese shares is about to peak



IT IS a toss-up which is the more extraordinary: the supply of public offerings coming from China, or the demand for them. China Merchants Bank, a second-tier lender valued at $17 billion (large, but in Chinese terms not very large), will begin trading on the Hong Kong Stock Exchange on September 22nd after issuing $2.4 billion in shares. The portion reserved for institutional investors was at least 35 times over-subscribed: the retail slice was 266 times over-subscribed. Almost no one is getting as many shares as they want; many are getting none at all.

And China Merchants is hardly the hottest deal. Beijing Jingkelong, a small but fast-growing store operator, sold $76m-worth of shares in an offering in which demand outstripped supply by 540 times. The pricing period for China BlueChemical, a former fertiliser subsidiary of China National Offshore Oil Corporation that is coming to market, has been shortened because of overwhelming interest—it is more than 100 times over-subscribed, and rising. Shui On Land, a large property developer particularly active in Shanghai, has begun promoting a listing; already it is fully subscribed.

Any number of other sales are percolating upwards, including Lee Kee Holdings, a zinc trader, LK Machinery, a die-casting firm, and China National Coal. All of them pale before the upcoming offering of Industrial and Commercial Bank of China (ICBC), the country's largest bank. This is likely to set a new record, with about $20 billion-worth of shares sold. The bank's total value will exceed $100 billion.

Among other notable aspects of this offering is that, had it been done only a few months ago, the shares might have been offered exclusively in Hong Kong. That was the case when Bank of China, the country's second-largest bank, offered $11 billion of shares in June, and when the fourth-largest lender, China Construction Bank, issued $9 billion last autumn. Since then, changes in government regulation and a successful secondary offering by Bank of China in Shanghai have encouraged more listings on the mainland.

Not long ago the size of the ICBC offering would also have been about 40% smaller, bankers say. Such is the appetite in both the Hong Kong and mainland Chinese markets that discussions now revolve around how much larger, not smaller, the listing can be. And whatever is visible is just the tip of the iceberg. Chinese deals often have a long gestation period. One investment bank says it is already considering offerings that may occur in 2008.

At the moment there may be no more exciting markets in the world than those in Hong Kong, Shanghai and Shenzhen. In a year when stock exchanges around the world are listless, share prices in Hong Kong are up by 17%. In mainland China, they have risen by even more. Comfortingly, profitability is rising even faster than share prices. After a nasty bear market, prices are now close to their 2000 peaks.

Having shaken off a sense of gloom, Hong Kong's retail investors now seem to have forgotten things can ever go wrong. They believe the Chinese government is bound to price the deals so share values rise afterwards, in as much as a flop would undermine future privatisations. That may be too optimistic; if the companies were sold too cheaply, the government would be accused of a giveaway. Still, the consensus is that shares in a newly offered company will tick up by 10-15%.

Local banks appear to share the confidence, extending margin loans for up to 90% of the initial share price. Allocations may be tiny, but the return on investment can be huge. Large blocks are reserved for Hong Kong tycoons, who in return agree not to flip their shares. Occasionally there are complaints of favouritism. But at least it is clear where the smart money is going.

Bankers wanted, Mandarin useful

The extraordinary pace of deals should continue for a bit longer but the nature of the offerings will soon change, if only because the largest companies, such as the state-owned banks, will have been sold. Some predict that the value of public offerings could drop by one-third next year. That, of course, would still leave plenty of business, which is why investment banks continue to hire at a frenetic pace. It has never been a better time to be able to read Mandarin and a financial statement.

But with the completion of the ICBC offering, probably in November, a different type of state-owned asset will come up for auction. Companies in all sorts of industries will be on offer—metals and mining, coal, rail, steel and ports—as well as smaller banks (though by any ordinary standard, not that small).

As the type of companies changes, the offerings themselves are likely to receive more scrutiny. In listing a state-owned business, raising money may be less important than increased transparency, demands for better corporate governance, and an emphasis on efficiency. With the smaller, private deals (see chart), there will be more pressure to justify how the money they raise will be spent than there has been with privatisations. For some firms, publicly traded shares will provide a currency for consolidating some of China's wildly fragmented industries.

For all the excitement, the offerings are, in a sense, incomplete. Most of the companies, public and private, sell only about 10-25% of their shares, so those who buy will be minority shareholders with fairly weak claims. Listing will inevitably shed light on operations: pesky investors may make some noise. But a truly capitalistic market driven by purely profit-driven investors—who take over laggards and toss out managers—is still far away.

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Buttonwood

Technical failure

Sep 21st 2006
From The Economist print edition

Some numbers are not magic

PRACTICAL traders, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct mathematician. That is what Keynes might have said had he considered the faith placed by some investors in the work of Leonardo of Pisa, a 12th and 13th century number-cruncher.

Better known as Fibonacci, Leonardo produced the sequence formed by adding consecutive components of a series—1, 1, 2, 3, 5, 8 and so on. Numbers in this series crop up frequently in nature and the relationship between components tends towards 1.618, a figure known as the golden ratio in architecture and design.

If it works for plants (and appears in “The Da Vinci Code”), why shouldn't it work for financial markets? Some traders believe that markets will change trend when they reach, say, 61.8% of the previous high, or are 61.8% above their low.

Believers in Fibonacci numbers are part of a school known as technical analysis, or chartism, which believes the future movement of asset prices can be divined from past data. Some chartists follow patterns such as “head and shoulders” and “double tops”; others focus on moving averages; a third group believes markets move in pre-determined waves. The Fibonacci fans fall into this last set.

Buttonwood, who is daringly defying the tide of history by moving from Economist.com into the newspaper, has bad news for the numerologists. A new study* by Professor Roy Batchelor and Richard Ramyar of the Cass Business School, finds no evidence that Fibonacci numbers work in American stockmarkets. The academics looked at the Dow Jones Industrial Average over the period 1914-2002 and found no indication that trends reverse at the 61.8% level, or indeed at any predictable milestone.

This research may well fall on stony ground. Experience has taught Buttonwood that chartists defend their territory with an almost religious zeal. But their arguments are often anecdotal: “If technical analysis doesn't work, how come so-and-so is a multi-millionaire?”. This “survivorship bias” ignores the many traders whose losses from using charts drive them out of the market.

Furthermore, the recommendations of technical analysts can be so hedged about with qualifications that they can validate almost any market outcome. As Professor Batchelor writes: “The root of the problem is the failure of technical analysts to specify their trading rules and report trading results in a scientifically acceptable way. Too often, rules are so vague and complex as to make replication impossible.”

Fibonacci numbers at least have the virtue of creating a testable proposition; one that they appear to fail. But chartists will not be completely discouraged. A review of the academic literature** finds that, of 92 modern studies of technical analysis, 58 produced positive results (although the researchers say some of these studies may be flawed and that the best results occurred before the early 1990s).

If the efficient market theory is correct, technical analysis should not work at all; the prevailing market price should reflect all information, including past price movements. However, academic fashion has moved in favour of behavioural finance, which suggests that investors may not be completely rational and that their psychological biases could cause prices to deviate from their “correct” level.

Chartism probably holds most sway in the foreign-exchange market. Although currency markets are liquid and transparent, many participants (such as central banks) are not “profit-maximising”. So it is possible that currency prices are not completely efficient. Furthermore, some technical predictions may

be self-fulfilling; if everyone believes that the dollar will rebound at ¥100, they will buy as it approaches that level.

Technical analysts also make the perfectly fair argument that those who analyse markets on the basis of fundamentals (such as economic statistics or corporate profits) are no more successful. Nevertheless, Buttonwood urges extreme caution in relying on their claims.

All that talk of long waves is distinctly mystical and seems to take the deterministic view of history that human activity is subject to some pre-ordained pattern. Chartists fall prey to their own behavioural flaw, finding “confirmation” of patterns everywhere, as if they were reading clouds in their coffee futures.

Besides, technical analysis tends to increase trading activity, creating extra costs. Hedge funds may be able to rise above these costs; small investors will not. As illusionists often proclaim, don't try this at home.

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*“Magic numbers in the Dow”

**“The Profitability of Technical Analysis: a review”, by Cheol-Ho Park and Scott H Irwin, University of Illinois

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New mortgages

Collateral thinking

Sep 21st 2006
From The Economist print edition

As property values rise, lenders link loans to house prices

FOR most homeowners, their house is their biggest single financial asset and their mortgage is their biggest single liability. House-price inflation has normally made this a good bet. But it makes little sense in financial theory for investors to borrow a lot to speculate on a single asset class. This is particularly true when high house prices in many nations have forced many buyers to take on debts that are a substantial multiple of their incomes.

The answer, according to Zurich Cantonal Bank, is to link the value of the loan to that of the property. On September 18th it launched a new product that offers two ways of doing so. One version includes a put option (a kind of insurance) linked to Zurich's house-price index. At a cost of around 0.5% a year, this option ensures that, if regional house prices fall, the size of the loan will decline in tandem. The second version links the level of the mortgage rate to the house-price index.

This is not the first product of this type. In July, Advantage, the British lending arm of Morgan Stanley, an American bank, unveiled a mortgage called Flexishare. Under this deal, the value of part of the loan rises and falls in line with the house price; in return, Advantage charges a lower interest rate (2.99%) on that portion of the loan. Morgan Stanley hopes to package up such loans and re-sell them on the capital markets, where they might be an attractive alternative to index-linked bonds.

On the surface, it certainly seems sensible for a homebuyer to finance a purchase with the equivalent of both equity and debt; that is what the corporate finance experts advise businesses to do. But there are some obvious caveats.

The low-interest portion of the Advantage mortgage may entice homebuyers who are struggling to afford their regular payments, thus tilting the loan book towards the least creditworthy part of the market. The structure also sounds a little like the “negative amortisation” loans (under which interest payments are added to the capital) recently introduced in America, which are seen as a sign of a housing bubble. And in Britain, home-equity schemes (which allow the elderly to release some of the value locked into their properties) have not enjoyed a great reputation.

But the big question is whether buyers will be willing either to pay a higher interest rate (in Switzerland), or to give up some of the potential rise in house prices (in Britain), in order to insure against the downside. British homebuyers, like their American counterparts, are mainly used to house prices going up. Significantly, while Advantage says it has seen interest in its Flexishare deal, it has so far had no actual takers.

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Economics focus

Dolling up the dole

Sep 21st 2006
From The Economist print edition

A better way to help America's jobless

"MANY of our most fundamental systems—the tax code, health coverage, pension plans, worker training—were created for the world of yesterday, not tomorrow. We will transform these systems." With these words George Bush laid out an agenda of domestic reform at the Republican convention in 2004. That agenda, starting with last year's attempt to transform America's vast state pension system, has gone nowhere. But Mr Bush's basic argument is right. Much of the machinery of America's domestic economic policy dates from the 1930s and needs repair. Unemployment insurance is a case in point.

Created by Franklin Roosevelt in 1935, America's dole has barely changed since. It provides temporary income support to laid-off workers and is financed by a small tax on wages. The details vary from state to state, but full-time workers who lose their jobs get a cheque worth, on average, just over a third of their previous wage for up to six months. Benefits can be paid for longer if the economy is in recession, but only if Congress agrees. By European standards, America's dole is short-lived, a characteristic that encourages people to get a new job quickly.

As a macroeconomic tool, the dole works well. Unemployment cheques support spending when workers are laid off, helping to smooth the business cycle. But the cash is not aimed at those who need it most. That is because a rising share of the unemployed are not laid off temporarily, but have seen their jobs disappear for good.

Research by Erica Groshen and Simon Potter, of the Federal Reserve Bank of New York, suggests that whereas temporary lay-offs explained much of the jumps in unemployment during the recessions of the 1970s and early 1980s, nowadays structural job losses dominate. People who are unemployed because their job has gone permanently need to find new lines of work. It takes them longer to find a job and, when they do, they are often paid considerably less than before.

Jeffrey Kling, an economist at the Brookings Institution, argues that the unemployment-benefit system ought to distinguish those who are temporarily out of a job but may find similar, or higher-paid work, and those who face permanently lower income. In a paper for the Hamilton Project, a research programme at Brookings that seeks new policies for America's centre-left, Mr Kling suggests that the dole should become less like a handout from the government and more like an insurance policy that individual workers finance themselves.

The idea is to give every worker an account, unsnappily called a "temporary earnings replacement account" or TERA. While in work, people could set aside money in these accounts. Those who lose their jobs could take cash out. The level and duration of withdrawals would be set by the government and would be the same as under today's unemployment system.

TERA firma

A worker who exhausted his account before he found a new job could borrow from it. Repayments would automatically be deducted from future earnings. At retirement, any outstanding TERA debt would be forgiven, while anyone who had a positive balance could withdraw it. The lowest-paid workers would not have to repay their TERA borrowing in full. Paying for these transfers would require a tax only one-third as high as today.

But Mr Kling also wants to supplement the wages of those who return to work on less pay. These subsidies could last up to six years and would be worth 25% of the gap between the new wage and the lesser of the old wage and $15 an hour. They would be financed from a payroll tax on the firms that laid people off.

Such subsidies are not a new idea. They are often touted as a means of helping workers in specific, declining industries and so limiting political pressure for protectionism. America already has a small scheme of this type for older workers in industries hit by foreign competition.

Critics of wage subsidies usually cite two drawbacks: they distort incentives and they are expensive. With a government subsidy, a plant-loving former steelworker might choose to become a part-time gardener rather than retrain for a more skilled job. How much such handouts cost the taxpayer depends on how many people are covered, how long the subsidies last, and what share of the earnings drop is replaced.

By limiting the subsidy to a quarter of the drop in a worker's hourly wage, Mr Kling makes sure no one is rewarded for simply putting in fewer hours. And by combining wage insurance with TERAs, he ensures that the new system, overall, would cost no more than today's unemployment insurance. Instead, government assistance would be better aimed. Mr Kling's calculations suggest that 61% of the benefits would go to those whose income is permanently lower after a job loss, against 34% today.

The new scheme might also enhance economic efficiency. Most workers would have a bigger incentive to find a job quickly than they do now, because they would bear the burden of paying for their unemployment benefits directly. Cross-subsidies between firms would be reduced. Under today's system the rate at which firms pay unemployment tax on their wage bill varies only slightly with the companies' history of lay-offs. Firms in declining industries with high lay-off rates are subsidised by other, more successful firms. Without these cross-subsidies, all firms would have fewer incentives to make temporary lay-offs and firms in declining industries would have more reason to cut wages before jobs.

Mr Kling's plan is not perfect. It is complicated, and administration costs could be high. But it combines sensible ideas from the political right (greater personal responsibility for financing unemployment) and left (more help for hard-hit workers). Mr Bush should seriously consider it.

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Epigenetics

Learning without learning

Sep 21st 2006
From The Economist print edition

The events of childhood may have an impact on the brain, even if no conventional memory is formed

FREUD was famously preoccupied with the influence of early childhood experiences on development. His theory of psychoanalysis, which provided a new approach to the analysis and treatment of abnormal adult behaviour, has attracted both ardent followers and fierce critics. According to this theory, the unconscious mind carries imprints of the past that mercilessly haunt the present. Unearthing those imprints is the key to understanding what is going on and then treating it.

In Freudian theory, the imprints are memories, albeit unconscious ones. In other words, they are encoded in the way that the nerve cells which make up the brain are connected to one another. This theory of unconscious early memory is controversial. On the other hand, it seems clear that early experience is important to later behaviour. So what is going on?

There is a growing school of thought that Freud was right, but for the wrong reasons. According to the members of this school, early experience does profoundly mould the brain. However, it is not memory that it moulds—at least, not memory as conventionally understood. What it actually moulds is the way genes work.

A gene is a piece of DNA that encodes a protein molecule. In other words, it is a set of instructions. But instructions are no use unless they can be executed, and executed in an appropriate way. So cells contain a system to read genes, regulate their reading and convert the results into proteins, which then carry out various functions in the body. Part of this system is called epigenetic imprinting. This is a way of modifying how easily a gene can be read.

Moshe Szyf, of McGill University in Montreal, studies the effect of maternal care on epigenetic imprinting. As he explained at this week's meeting on Epigenetics and Neural Developmental Disorders, held in Beltsville, Maryland, imprinting might be a general mechanism whereby experiences are translated into behaviour. If that turns out to be so, it will affect the understanding and treatment of mental illness.

Imprints of care

The first inkling of this came when Michael Meaney, one of Dr Szyf's long-term collaborators, noticed that rat pups whose mothers spent a lot of time licking and grooming them grew up to be less fearful and better-adjusted adults than the offspring of neglectful mothers. Crucially, these well-adjusted rats then gave their own babies the same type of care—in effect, transmitting the behaviour from mother to daughter by inducing similar epigenetic changes.

When Dr Szyf looked at the brains of the two sorts of rats, he found differences in their hippocampuses. Among other jobs, the hippocampus is involved in responding to stress. Dr Szyf discovered that better-adjusted rats had, in their hippocampuses, more active versions of the gene that encodes a molecule called glucocorticoid-receptor protein. Glucocorticoid is a hormone produced in response to stress and its job is to make the animal behave appropriately. But too much glucocorticoid is a bad thing, so there is also a way to switch off its production. When glucocorticoid binds to its receptor in the hippocampus, that activates the expression of genes which dampen further synthesis of the hormone. This feedback system is weaker in rats that have had little maternal care. As a result, they are more anxious and fearful, and show a heightened response to stress.

The researchers went on to study what is responsible for the difference in expression of the glucocorticoid-receptor gene. They found that two types of imprinting are involved. One adds molecules called methyl groups to the DNA of the gene. This suppresses gene expression. The other adds acetyl groups, which are slightly larger, to the proteins around which the DNA is coiled. This has the opposite effect, making gene expression easier. Rats that had experienced little maternal care showed high levels of methylation and low levels of acetylation of the glucocorticoid-receptor gene and its neighbouring proteins. The opposite was true for those that had had a more attentive upbringing.

This explains why levels of glucocorticoid-receptor protein are different in the two groups of rats. But Dr Szyf still wanted to know what triggers epigenetic tagging in response to maternal care. He suspected a protein called NGFI-A, which is produced in response to stimulations such as licking and grooming. The more stimulation a rat pup receives, the more NGFI-A it produces.

This suspicion was confirmed when he found it is also the case that the more maternal care a pup receives, the more NGFI-A it has bound to its glucocorticoid-receptor genes. Then, in a series of experiments on cell cultures, he showed that when bound to this gene NGFI-A attracts two enzymes involved in epigenetic tagging. The enzymes in question are histone acetyltransferase (which adds acetyl groups to proteins) and methylated DNA-binding protein-2 (which removes methyl groups from DNA).

According to Dr Szyf, epigenetic modifications in response to maternal care occur during the first week of life after birth—the so-called critical period. The effects are stable, and persist into adulthood. Because this type of programming involves adding and removing chemical groups to and from the DNA and its nearby protein molecules, the researchers wondered whether reversing those reactions during adulthood would affect an animal's behaviour. To test this, they used two chemicals. One, called TSA, inhibits the enzyme that removes acetyl groups. The other, called L-methionine, is a donor of methyl groups.

When injected into the brain cavity near the hippocampus, TSA increased both the amount of acetylation and the level of expression of the glucocorticoid receptor in adult rats that had had little maternal care early in life. As a result, those rats became less anxious and fearful. By contrast, L-methionine increased the level of methylation and thus reduced the expression of the gene in animals with loving mothers, and led to fear, anxiety and a heightened response to stress.

Marked for life

Dr Szyf and Dr Meaney have made a strong case that different epigenetic profiles resulting from early experience correlate with behavioural differences in adults—in rats at least. They are now looking at people. Their first human study is into whether those who commit suicide have different imprints in their hippocampuses from those who die in accidents. They are also studying blood samples from people with depression or with violent tendencies, to look for epigenetic markers that may exist for either of these two behaviours. If successful, that might lead to new methods of diagnosing psychiatric conditions.

Meanwhile, Dr Szyf suspects that response to stress is just one behaviour that might be regulated this way. Whether epigenetics is important for other, more complex, behaviour remains to be seen. If it is, however, the implication could be huge. For decades, attempts to draw a direct line between genes and mental illnesses have disappointed their authors. But environmental explanations have failed, too. Psychiatrists now realise that there is something else in between. That something may be epigenetic

imprinting.

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About sponsorship

Evolution and diet

Bitter consequences

Sep 21st 2006
From The Economist print edition

Green vegetables really do taste horrible

"EAT up your greens" is the exasperated cry of many a parent when faced with a fussy child. But the paradox of vegetables is that they are both good and bad for you. The cultivated plants consumed by all folks except hunter-gatherers have evolved an ambiguous relationship with people, in which they exchange the risk of being eaten by a human for the reproductive security that domestication brings. But the wild plants from which these cultivars are descended are very definite about the matter. They do not want to be consumed and they make that opinion known by deploying all sorts of poisonous chemicals to discourage nibbling herbivores. In many cases, those poisons have persisted into the cultivated varieties, albeit at lower levels.

Animals, of course, have evolved ways of dealing with these poisons. The best of these, from a plant's point of view, is when an animal can taste, and thus reject, a poisonous chemical. This has long been assumed to be the basis of the taste of bitterness, but that theory has only now been put to a clear test. In a paper just published in *Current Biology*, Mari Sandell and Paul Breslin, of the Monell Chemical Senses Centre, in Philadelphia, have looked at the phenomenon in that *bête noire* of presidents and parents alike: broccoli.

Bitter tastes are detected by receptor proteins that are, in turn, encoded by a family of genes known collectively as *TAS2R*. Humans have around 200 *TAS2R* genes, each sensitive to different groups of chemicals. That variety, in itself, indicates the range of the plant kingdom's weaponry. Dr Sandell and Dr Breslin, though, focused their attentions on just one of these receptor genes, called *hTAS2R38*. The protein derived from this gene is known, from laboratory experiments, to be sensitive to a substance called phenylthiocarbamide (PTC). This compound contains a molecular group called thiourea. And thiourea-containing substances are known from other studies to inhibit the function of the thyroid gland.

Cruciferous vegetables, such as watercress, turnips and—most pertinently—broccoli, are rich in a group of thiourea-containing compounds called glucosinolates. Dr Sandell and Dr Breslin wondered if there might be a connection. And, since different versions of *hTAS2R38* code for proteins that have different levels of reaction to PTC, they wondered if that might be reflected in the fact that some people like broccoli, and others do not.

The two researchers assembled a group of volunteers and checked which versions of the *hTAS2R38* gene they had. They then fed the volunteers vegetables and recorded their reactions.

All of the vegetables were thought by at least some people to be bitter, but not all of them were cruciferous plants. The non-cruciferous ones were plants which, so far as is known, do not contain glucosinolates.

Mild and bitter

The results were clear. All volunteers found the non-cruciferous vegetables equally bitter, but their reactions to the cruciferous ones depended on their genes. Those with two copies of the version of *hTAS2R38* coding for the protein that binds best to PTC (one copy having been inherited from each parent) thought broccoli and its cousins the most bitter. Those who had two copies of the poorly binding version thought they tasted fine. Those with one of each had an intermediate reaction.

Despite broccoli's bad reputation, the most bitter vegetables, according to this research, are swedes and turnips. That accords well with work which has shown that eating these vegetables suppresses the

uptake of iodine into the thyroid gland. Iodine is an essential ingredient of thyroxine, a hormone produced by that gland.

The upshot of all this is that the complaints of children (and, indeed, of many adults) that green vegetables are horrid contains a lot of truth. There is no doubt that such vegetables are good for you. But they are not unequivocally good. As is often observed in other contexts, there is no free lunch.

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About sponsorship

Palaeometeorology

Running rings round storms

Sep 21st 2006
From The Economist print edition

Trees keep records of passing hurricanes

STUDYING the past is a good way to understand the present, and may even illuminate the future. But the past does not give up its secrets easily. Hurricane scientists, for instance, would like to know about long-term changes in the frequency and strengths of the storms they study. That would help to show whether the shifting pattern of hurricanes seen in the past few decades is cyclical, random or part of a trend that might be caused by global warming. Unfortunately, meteorologists have been keeping systematic tabs on the relevant data for only about 60 years. Before that, records are sporadic and anecdotal—and that is not enough to see the bigger picture.

Human records, however, are not the only sort available. Trees are popular with scientists who want to look at what happened a few hundred years ago, because their annual growth rings mean that their wood can be dated accurately. And Dana Miller, of the University of Tennessee, and her team have used that insight to search for hurricanes that humanity has failed to record. Their results, just published in the *Proceedings of the National Academy of Sciences*, have identified a number of previously unknown storms that hit the south-west coast of North America. The trick they used to do this was to look at the isotopic composition of the oxygen in the wood of local trees.

Water contains two isotopes of oxygen, one of which has two more neutrons than the other, making it heavier. When a hurricane forms, it tends, initially, to rain water molecules containing the heavier isotope. At that point it is still over the sea. Conversely, the rain that falls from an old storm has more light oxygen in it—and that is the sort of rain that tends to fall on land.

When this rain enters the soil, some of it is taken up by trees and incorporated into their wood. So, by measuring the ratio of the two isotopes in the rings of trees, and matching the result to the age of the ring, a history of hurricanes spanning the life of the tree can be reconstructed.

Dr Miller's trees of choice were longleaf pines on the Valdosta State University campus in Georgia. Some were still alive, and some were in the form of stumps left from logging that took place on the site at the beginning of the 20th century.

To test her method, Dr Miller looked first at the period from 1940 to 1990 (America began making accurate hurricane records in 1940). She was able to identify all 18 years when storms had affected the university campus in that time, though the method also suggested a storm in one year (1943) when there had been none.

Going back further into history, she looked at 1855-1939. Here the records for landfalls are still good, although storms were not tracked accurately before they landed. Again, the method identified all known years with storms (21 in total), and indicated one other year when a hurricane had passed. That may or may not have been a false positive. Going back further still, to 1770-1854, the records are much more patchy. In this case the trees suggested hurricanes had passed by in 25 years, whereas only ten stormy years had been recorded.

Clearly, the method is not perfect, as the false positive in 1943 shows. But over a period of centuries such errors will come out in the statistical wash. And, by extending the method to other sites (Dr Miller now has data from South Carolina and Florida, as well as Georgia), it should be possible to look for long-term patterns in the frequency of hurricanes and to answer questions that are of interest to insurance companies and environmentalists alike.

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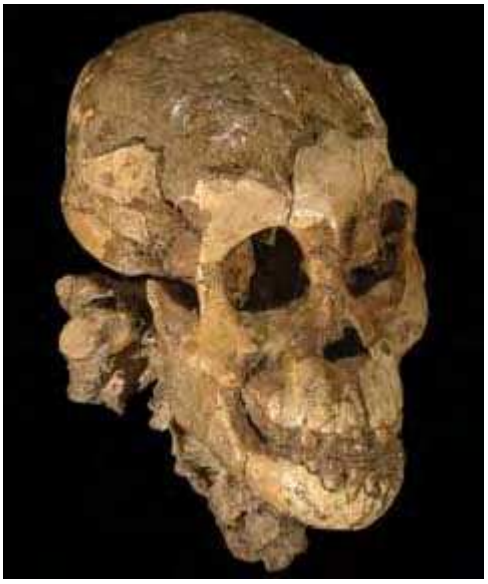
Palaeoanthropology

Lucy's daughter

Sep 21st 2006
From The Economist print edition

An ancient child has been discovered



THIS is a photograph of the skull of a three-year-old girl—or a 3m-year-old girl, depending on how you count it. It was discovered, along with much of the rest of her skeleton, in the Hadar region of Ethiopia, in 2000. She belonged to a species called *Australopithecus afarensis*, which is believed to be ancestral to modern man. Following five painstaking years spent extracting her bones from their sandstone casing, Zeresenay Alemseged of the Max Planck Institute for Evolutionary Anthropology, in Leipzig, and his colleagues have described her in *Nature*. Her leg bones confirm that *A. afarensis* could walk upright, though her ape-like upper body and the arrangement of the semi-circular canals of her ears, which are the location of the sense of balance, suggest she also spent a lot of time climbing trees. The evolutionary transition to full-time walking, which would have freed early humans' hands for using tools, clearly came later.

Since young bones are fragile, such a complete specimen of an ancient infant is a startling find. Comparing it with adult specimens (the most famous of which is known as Lucy) should show the way that *A. afarensis* grew from childhood to adulthood, particularly the way the brain grew. Knowing how that process has changed over time may shed light on the evolution of humans' superior intelligence, which relies on a long childhood.

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About sponsorship

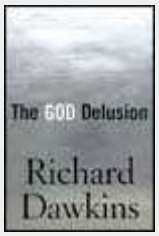
Religion

Misbegotten sons

Sep 21st 2006
From The Economist print edition

Richard Dawkins has long trumpeted the rationale of science. Now, at 65, he has finally marshalled a lifetime's arguments against believing in God

The God Delusion
By Richard Dawkins



To be published in America by Houghton Mifflin on October 18th
Bantam; 372 pages; £20.

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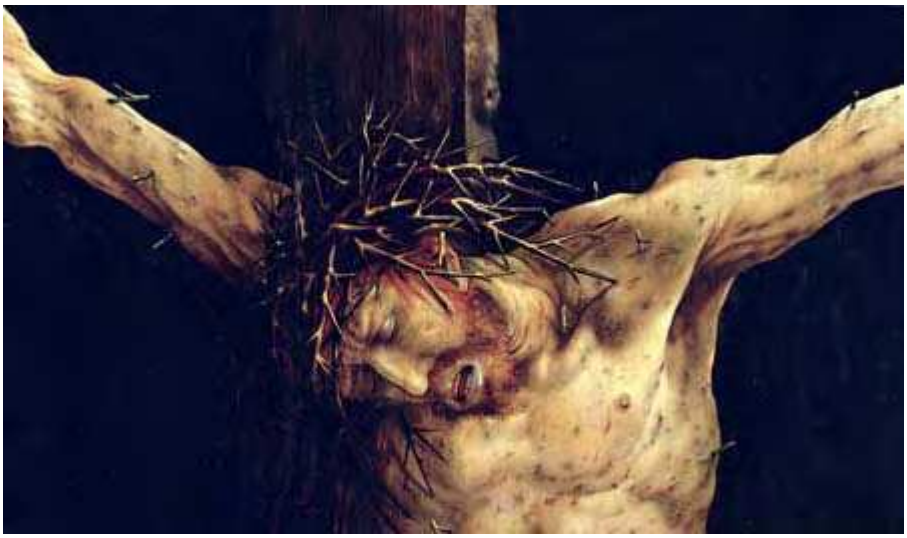
Bridgeman



“THE GOD DELUSION” is an irreverent book. The author, Richard Dawkins, accuses Jesus of having “dodgy family values”. And don't get him started on the God of the Old Testament, “a misogynistic, homophobic, racist, infanticidal, genocidal, filicidal, pestilential, megalomaniacal, sado-masochistic, capriciously malevolent bully”.

Mr Dawkins is an atheist, an evolutionary biologist and an eloquent communicator about science, three passions that have allowed him to construct a particularly comprehensive case against religion. Everyone should read it. Atheists will love Mr Dawkins's incisive logic and rapier wit and theists will find few better tests of the robustness of their faith. Even agnostics, who claim to have no opinion on God, may be persuaded that their position is an untenable waffle.

Like several other anti-religious volumes of recent years (“The End of Faith”, “Breaking the Spell”), Mr Dawkins's book is partly a reaction to the September 11th attacks. These have been portrayed as essentially religious acts. Whatever the hijackers' political or social motivations, it was religious faith that ultimately turned them into killing machines. They believed they were doing God's work and would be justly rewarded in the afterlife.

It is easy to denounce such deluded zealots, but what relation do they have to ordinary, “sensible” religious people? The problem, as Mr Dawkins sees it, is that religious moderates make the world safe for fundamentalists, by promoting faith as a virtue and by enforcing an overly pious respect for religion. (Why is it easier for a Quaker to avoid combat duty as a conscientious objector than someone who simply deplores violence?) Furthermore, the argument goes, any positive aspects of religion can be replaced by equally beneficial non-religious substitutes.

As a prelude to these contestable claims, Mr Dawkins examines the interesting question of why religion is so widespread. Worshipping deities would seem to be an irrational and wasteful habit, yet it has been found in all cultures. Wouldn't natural selection have got rid of religious tendencies if religion were clearly bad for humans after all?

Not necessarily. Mr Dawkins advocates the idea that religion is a by-product of mental abilities that evolved for other purposes. One form of this theory is that children are “programmed” to believe anything their parents tell them, which is quite sensible in light of all the useful information parents can share. But this system is vulnerable to becoming a conduit for worthless information that is passed on for no other reason than tradition.

However, this does not explain the special appeal of religious ideas as opposed to any bizarre ideas. Religious thoughts must be especially compatible with human psychology. “Religion has at one time or another been thought to fill four main roles in human life: explanation, exhortation, consolation and inspiration,” writes Mr Dawkins, enumerating the four targets of his logical firepower.

He shows that religion does not provide a satisfactory explanation for anything. Here his arguments are well-rehearsed and finely honed from decades of combating American fundamentalists. This section will appeal to anyone who ever wondered, if God created the universe, who created God?

As for exhortation, he argues that in practice, religion is not a legitimate source of morality. If it were, Jews would still be executing those who work on the Sabbath. Where morality actually does come from is less clear. Mr Dawkins suggests the source is a combination of genetic instincts, which evolved because morals allowed humans to benefit more efficiently from co-operation, and a cultural *Zeitgeist*.

For some people consolation and inspiration are genuine benefits of religion, as even Mr Dawkins will allow. But these functions can and should be fulfilled by other means, he says. This is the most problematic part of his thesis. In his case contemplation of the natural world does the job; his final chapter is an ode to the perspective-altering discoveries of modern physics. But only a minority will find as much consolation in quantum physics as in the prospect of reuniting with their dearly departed in heaven.

Even if it is granted that religion should be expunged, how does Mr Dawkins suggest this could be done? Buy his book as a Christmas gift for one's religious friends? Obviously, many people will never be persuaded; that is precisely the nature of faith. The actual plan is twofold.

First, Mr Dawkins wants to subvert the mode of transmission between parent and child. He calls a religious upbringing a form of indoctrination and equates it to child abuse. He wants to encourage a change in the *Zeitgeist*, so that when people hear the words “a Catholic child”, or “a Muslim child”, they will wince, and ask how a child could already have formed independent opinions on transubstantiation or *jihad*.

His second and related plan is to energise atheists, whom he regards as being in the same situation as homosexuals were 50 years ago: stigmatised and unelectable to public office (in America, at least). Mr Dawkins dreams of a day when atheists are as well organised and influential as Christian conservatives have become. If nothing else, his book should help bring the atheists out of the closet.

The God Delusion.
By Richard Dawkins.
Bantam; 372 pages; £20.

To be published in America by Houghton Mifflin on October 18th

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About sponsorship

Conservation and feminism

African greenheart

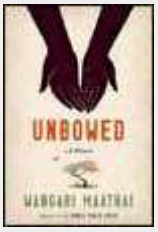
Sep 21st 2006
From The Economist print edition

WANGARI MAATHAI is an environmentalist, a feminist and a brave daughter of Kenya. The Nobel peace prize she won in 2004 highlighted the links between the green and feminist movements in Africa. It also gave rise to this memoir.

Ms Maathai was born in 1940. Her first meal was traditional Kikuyu fare: yam, banana and lamb chewed soft by her mother. Missionary Christianity—Italian Catholic and Scottish Presbyterian—had already replaced many of the other Kikuyu traditions. Schools taught children to read and write; a new form of magic that overshadowed the old.

Ms Maathai was bright and lucky. She won a scholarship to an American university and, when she returned, went on to teach veterinary anatomy at Nairobi University. She married an ambitious politician, Mwangi Mathai, who divorced her a few years later. The public court hearings were a humiliation. She was imprisoned for questioning the judge's competence and ordered to drop her husband's name. She added an ‘a’ instead.

Unbowed: A Memoir
By Wangari Maathai



Knopf; 307 pages; $24.95. To be published in Britain by Heinemann in February 2007

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Divorce freed Ms Maathai to establish the Green Belt Movement which aimed to encourage planting tree seedlings—indigenous acacia, fig, cedar and baobab—and help reverse deforestation. Ms Maathai eschewed professional planters. Ordinary village women could do it just as well, she thought. “Use your woman sense. These tree seedlings are very much like the seeds you deal with—beans and maize and millet—every day,” she instructed them. Kenyan women have since planted 30m seedlings and the movement has caught on in other African countries too.

Tree planting gave way to activism. Ms Maathai challenged the land grabs of President Daniel arap Moi's regime. She was jailed for challenging an attempt to build on Uhuru Park—one of the few green spaces left in downtown Nairobi—and beaten senseless for protecting the Karura forest at the edge of the city. “What people see as fearlessness is really persistence,” she writes. Persistence paid off. Much of her memoir reads like a lament, though. A seedling was planted over her mother's country grave. Her death, at the age of 94, reflected the loss of a pristine Kenya. In her mother's childhood, Ms Maathai says, the Gura river used to roar down from the Aberdare range, clear and glittering with trout. Now the water seeps into the riverbed and “the river says nothing”.

In 2002 Mr Moi stepped down in favour of a democratically elected opposition. Ms Maathai was elected an MP. She avoids criticising the present government for its corruption and incompetence. Ms Maathai has in the past held odd views on AIDS. She has little to say about this here or about Kenya's population, which has mushroomed from 2.6m in 1925 to 34m in 80 years. Ms Maathai repeatedly lists the prizes she has won. This may or may not reflect a childlike humility. Hers is not a well-written book, but it is inspirational. Ms Maathai will not be beaten down. “We cannot tire or give up.”

Unbowed: A Memoir.
By Wangari Maathai.
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About sponsorship

Kosovo

Time for a reckoning

Sep 21st 2006
From The Economist print edition

PICKING up this book one might be tempted to splutter in amazement at its subtitle. How the world failed Kosovo? Compare and contrast with Iraq: number of peacekeepers killed in Kosovo by hostile forces? Zero. Resources? Twenty-five times more money and 50 times as many troops, if measured on a per head basis, than in Afghanistan.

So, with troops dying daily in Iraq and Afghanistan and with billions of dollars poured into them only to shatter the former and turn the latter into the biggest drugs producer in the world, Kosovo would actually seem to be a world-class success, hardly a failure. The authors, both of whom have worked for the UN mission in Kosovo, would beg to differ. And despite its rather sensationalist title, they have produced an excellent and timely book.

Peace at any Price: How the World Failed Kosovo
By Iain King and Whit Mason

Cornell University Press; 328 pages; $27.95.
Hurst; £15

Buy it at
Amazon.com
Amazon.co.uk

Although it has hardly made the front pages, there has been some intense discreet diplomacy concerning this problematic legacy of the Balkan wars in recent weeks. Talks on Kosovo's future began in February under the aegis of the UN and are led by the former Finnish president Martti Ahtisaari. Technically Kosovo remains a part of Serbia, but since 1999 it has been under the jurisdiction of the UN. Of its 2m people more than 90% are ethnic Albanians who want nothing less than full independence. Serbia and Kosovo's Serbian minority reject this. Mr Ahtisaari says that the likelihood of Serbs and Albanians reaching a compromise is as likely as two men having a baby together.

He will probably soon recommend some form of independence for Kosovo. It is quite possible, when he does, that violence will break out again. At that point, anyone who wants to know what has happened in Kosovo since NATO's intervention in 1999 will be relieved to find this detailed book analysing the work of the UN, which has tried to administer the place for the last six years, and whose mandate is now coming to an end. The authors find much to criticise, and in much of this they are justified. However, many of their comments are made with the benefit of hindsight, and they are harsh.

What is refreshing are their frank judgments. For example: “Most Albanians who took up arms to challenge Serbian oppression did not object to one ethnic group bullying all the others; they simply wanted their group to be the one on top.” The authors believe the UN should have been more robust about challenging what they call the “thugocracy” which they say emerged in the wake of the Kosovo war. This is true, but as they point out, most of the damage was done in the first few weeks and months after the war when the UN did not have the resources to do it, although NATO did.

This is a serious and well-considered book, which makes suggestions about what has gone wrong and how such mistakes can be avoided by future international missions. “The overriding lesson from Kosovo”, say the writers, “is this: stable societies don't just happen, they are built. An international administration must be prepared to confront and defeat the forces that preserve the unacceptable aspects of the status quo.” Most readers of *The Economist* would agree with that. But very few of those readers are Kosovars, let alone Iraqis, Afghans or Sudanese. Herein lies the real problem perhaps?

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The second world war

Moscow mourning

Sep 21st 2006
From The Economist print edition

AS MILITARY epics go, Hitler's lightning assault on Moscow in June 1941 and the desperate but successful defence of the Russian capital that winter can hardly be matched. It has an able chronicler in Sir Rodric Braithwaite, who, as British ambassador to the city from 1988-92, witnessed the decline of the Soviet Union and the birth of democratic Russia. His book, which came out in Britain in the spring, will be published in America at the end of this month.

Sir Rodric's affection for Russia, and his extensive network of friends there, are the basis for the book. He creates a mosaic of eyewitness accounts, many from people still living, which brings across well the surreal complacency of the days leading up to the war, when Stalin forbade his generals from preparing any defence, the panic that followed, and the gradual recovery of an effective, meatgrinding military machine.

Any book that uses the stories of dozens of people, mostly with names very unfamiliar to the lay reader, risks being confusing. Some characters run through the book, such as Marshal Konstantin Rokossovski, a half-Polish military genius. But the author might have done better to use fewer stories and tell them more fully.

Moscow 1941: A City and Its People at War
By Rodric Braithwaite

Knopf; 416 pages; $30.
Profile Books; £20

Buy it at
Amazon.com
Amazon.co.uk

It is worth recalling that Hitler's megalomaniac military blunders were even greater than Stalin's. Had the German army been told to befriend, rather than subjugate, the people it conquered; had it been allowed winter supplies and clothes, and had it concentrated on one objective rather than several, the enfeebled and chaotic Soviet defences might have buckled completely.

Soviet wartime conditions are painted in all their gruesome inefficiency and brutality: the midnight calls from the NKVD, the careless sacrifice of lives, the endless political interference—and above it all the malign, ruthless, suspicious figure of Stalin. Although Sir Rodric tries to strip away the decades of Soviet propaganda, a slightly Russo-centric tone still prevails. Poles in particular may find his cheery treatment of Marshal Rokossovski, who as the military minder to post-war Poland oversaw the execution of many innocent and patriotic soldiers there, as verging on the scandalous.

The more modern Russia tries to use wartime heroism as its unifying national myth, the more tempting it is to argue that Hitler and Stalin were villains of equal hue. The crude triumphalism of the celebrations in Moscow to mark the 60th anniversary of the war's end, and the perverse whitewashing of Stalinist crimes towards Poland, the Baltic states and other countries, have caused many outside Russia to rethink somewhat their attitude to the second world war's causes and aftermath. Sir Rodric's book may, unfashionably, dodge some of those complexities. But it does give a vivid picture of the stark and bloody struggle for national survival with which Russia's war began.

Moscow 1941: A City and Its People at War.
By Rodric Braithwaite.
Knopf; 416 pages; $30.
Profile Books; £20

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About sponsorship

New fiction

Confused in Congo

Sep 21st 2006
From The Economist print edition

JOHN LE CARRÉ seems to have found a replacement for his erstwhile exposure of the sordid betrayals and counter-betrayals of the cold war. Like “The Constant Gardener”, about the exploitation of AIDS patients by pharmaceutical companies, “The Mission Song” takes place largely in Africa. Long pillaged by the endemically corrupt types this author often fancies, Africa seems right up Mr le Carré's nasty little street—Congo perhaps most of all.

More than 4m people have died there since 1998 in a regional scramble for local power and natural resources. Unfortunately, neither worthy intentions to shed light on this conflict nor any mastery of its complexities alchemises this novel into compelling fiction.

Half Congolese himself and raised in Africa, Salvo is a 29-year-old Londoner and an expert on obscure African languages. The interpreter is whisked away to an unidentified island retreat. An unnamed “syndicate”—a commercial concern in connivance with Her Majesty's Government—needs Salvo to interpret for three Congolese strongmen, with the aim of co-ordinating a coup. This “small war” will pre-empt the forthcoming UN-supervised elections, create yet more anarchy and somehow bring unity to the mineral-rich eastern sector. Yet torture and subterfuge ensue, and once back in London Salvo resolves to stop the coup.

Mr le Carré's lines sometimes engender incisive commentary—“Elections are a Western jerk-off”—and Salvo's interpreting skills are put to good use in the plot. But a large proportion of “The Mission Song” is consumed with set-piece monologues by the three Congolese big men, laying out their political viewpoints. Meticulously researched perhaps, but these speeches are tiresome.

Nor do these tracts appreciably advance the reader's comprehension of Congo's confusion. Salvo's extra-marital romance with a Congolese nurse in London on either side of the island conference is at least more readable. But the love affair cannot redeem the long slog through the novel's middle (strangely similar to the thick jungle and unpaved roads that characterise much of Congo itself) from which many a book buyer may never emerge.

The Mission Song.
By John le Carré.
Little, Brown; 337 pages; $26.99.
Hodder & Stoughton; £17.99

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By John le Carré

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About sponsorship

London theatre

Chin up, Kevin

Sep 21st 2006
From The Economist print edition

With fresh funds in place and a new season about to start, Kevin Spacey hopes things are looking up at the Old Vic

THE show goes on. London's Old Vic, under the management of Kevin Spacey, an Oscar-winning American actor, closed for business in April after a critical and commercial disaster. Over the summer the Old Vic's finances have been stabilised by the write-off of a £400,000 ($752,000) debt by its associated theatrical investment company, Old Vic Productions plc. It reopened on September 15th with Mr Spacey playing the bravura part of the disenchanted drunk, Jim Tyrone, in Eugene O'Neill's “A Moon for the Misbegotten”.

Knee hugger

Mr Spacey, whose personal fund-raising target is £1m a year, says money is coming in faster than before from corporate sponsors such as Morgan Stanley, 3i and Starbucks. His personal contribution is to waive his salary of “about £100,000” a year as artistic director. He is paid a little to be an actor or director. The Old Vic is strictly private enterprise; only the Heritage Lottery Fund responds to its appeals for public funds, granting just over £96,000 in all for outreach work among local schoolchildren in Lambeth and for preliminary development studies.

The new season's programme suggests that Mr Spacey has listened to criticism of a shaky repertoire which rose to a crescendo in April with a production of “Resurrection Blues”, a late Arthur Miller piece, poorly directed by an old Hollywood hand. The O'Neill play is directed by Howard Davies, with whom Mr Spacey has done memorable work in the past. It will be followed by two Shakespeares and then John Osborne's “The Entertainer”. All fairly safe; all potentially intriguing.

Mr Spacey insists that he has not trimmed: “Everything's been on the calendar for years.” Nonetheless, he does listen more carefully to more voices from the English theatre. He has persuaded Edward Hall,

Matthew Warchus and Anthony Page, all clever, experienced directors, to join him as Old Vic associates.

“The good news is that our heads are above water,” he says, but Mr Spacey is paddling hard. At 47, he is still slim—there is an exercise bicycle in his office at the Old Vic—and he exudes charm and sexuality. Mr Spacey has adapted enthusiastically to the London theatre scene, but it is not always as generous to him. His motives are questioned, critics doubt his artistic judgment and an opaque corporate structure at the Old Vic has stirred muddy waters.

The Old Vic is where much of England's finest classical acting was performed by Laurence Olivier, John Gielgud, Richard Burton and Edith Evans. The National Theatre started there but once it moved into its own premises on the south bank of the Thames the Old Vic appeared doomed. In 1998 it was saved, not for the first time, by a group of well-wishers organised by an energetic, aspiring theatrical producer called Sally Greene. She established the Old Vic Trust to run the building, and became, as she remains, its chief executive. (Indeed, her publicity says she owns the Old Vic.) In 2000 Ms Greene changed the name of her theatre investment company to Old Vic Productions, where she is also chief executive. She went on to raise £1.6m from shareholders in 2000 and a further £1.1m in 2003, which helped to write off the acting company's debts.

Last year's loss was £765,000. But that was before “Billy Elliot”. Old Vic Productions does not sound like a company that invests millions in elaborate, expensive musicals that play the world over and make fortunes for producers like Andrew Lloyd Webber, but Ms Greene was excited by Stephen Daldry's film of “Billy Elliot”. She persuaded Sir Elton John to write the music for the rousing and tearful story, set against the improbable background of the 1984 miners' strike, of the son of an unsympathetic striker's family who aspires to become a ballet dancer.

“Billy Elliot, The Musical” opened in April 2005, the reviews were unanimously splendid; within 12 months it was making healthy profits and plans were being made for a New York production, though it must be doubtful whether the first scene (grainy film from 1947 of a post-war Labour Cabinet minister, Herbert Morrison, addressing the Durham miners' gala) can survive the Atlantic crossing.

Cuckoo in the nest

To retain its privileged place in the queue of co-producers, Old Vic Productions needed fresh capital. In May, Ms Greene loaned the company £700,000 at 7%. Presently Old Vic Productions is raising a further £1.6m. Mr Spacey, who sits on the board of the company, is delighted: “The purpose of raising money from the share issue is two-fold. It's ‘Billy Elliot', which people will spend more time thinking about, but it's also to support the Old Vic Theatre Company.” Presumably, the shareholders will expect to have an early look in, but the presence of a hit musical in the portfolio ought to reassure an ambitious classical theatre company. Unless, of course, “Billy Elliot” flops in New York.

But Mr Spacey is conscious of the lingering perception that he is a cuckoo in the nest. He insists that he is not building a monument to himself. “There is a suggestion I want to be a second Olivier,” he says. “But I'm not Olivier. It's not the 1960s. We are competing in a commercial world in which the Old Vic is a weird hybrid.” Mr Spacey talks earnestly about building a new audience, beginning in local schools.

Sponsors are more comfortable with outreach work, but Mr Spacey says that fund-raising for his company is becoming easier, despite “Resurrection Blues”. He claims he has raised more money for the theatre in the past six months than in the previous two years.

This is not altogether surprising. Mr Spacey is an accomplished salesman. Doubt his commitment, and he says he lives roughly 40 weeks out of 50 in London, returning to Hollywood only when a good movie beckons. Doubt his staying power and he says that he will be at the Old Vic for another nine years: “People are beginning to see I'm serious about this,” he says. He insists that attention will eventually begin to shift from him to the company. “We're not in a rush. I'm here for a long time.” It looks as if London's theatrical community may have to learn to love Mr Spacey.

“A Moon for the Misbegotten” is at the Old Vic, London, until December 23rd. Tickets are available at www.oldvictheatre.com

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About sponsorship

Oriana Fallaci

Sep 21st 2006
From The Economist print edition

Oriana Fallaci, journalist and fighter, died on September 15th, aged 77

AP

FAINTHEARTS may prefer not to say that the West is at war with terror. But Oriana Fallaci, Italy's fiercest and most famous journalist, had no doubt at all. She felt it “at nine o'clock on the dot” on the morning of September 11th 2001, in her brownstone house in the middle of Manhattan, before she had heard or seen anything she could put a finger on: “the sensation one feels in war, as a matter of fact in combat, when with every pore of your skin you feel the incoming bullet or rocket, and your ears perk up and you scream to those next to you: ‘Down! Get down!’”

Years of experience had primed her for this moment. Her teenage work as a resistance fighter in and around Nazi-occupied Florence, codename “Emilia”, carrying messages and explosives. Reporting from war zones in South America, the Middle East and Vietnam, where a note on her rucksack instructed that her body should be sent to the Italian ambassador “if KIA”. Near-death in the Mexico City massacre of 1968, shot and left lying among heaps of dead beside an “execution wall”. Her waif-like body, with perfect cheekbones and hair sometimes plaited like a schoolgirl's, suggested that she lacked the strength for this sort of life. But she was a tiger.

Anyone who doubted that had only to be interviewed by her. From the mid-1960s to the mid-1980s she sought out the powerful, collecting such a string of famous pelts that in the end they jostled to be asked. At first she played feminine and demure; then, pouncing and insulting, she would rip out the innards of her victims. She made Henry Kissinger admit that he saw himself as a lone cowboy leading the herd, and drew from Pakistan's Zulfiqar Bhutto such words about India that peace between the two countries was held up for a time. Meeting Ayatollah Khomeini, she appeared barefoot and in a *chador*; but before long that “medieval rag” was flung boldly off, sending him scuttling away.

Men of this sort, “abusers of power”, both fascinated and repelled her. She dwelled on Yasser Arafat's swollen belly and his red, fleshy lips; she thought Khomeini the most handsome old man she had ever seen. As she talked to Werner von Braun, a former Nazi who was then directing America's space programme, she realised that his sweet-sour smell was the same lemon disinfectant soap used by the Nazis in Florence.

She could always sniff out tyranny, and after that September morning in Manhattan, she knew definitively where it lay. Suddenly she was in the front line again, solid with her adored America against the Muslim enemy. “Duty to her culture” required her to write for hours at a stretch in furious isolation,

living on cigarillos and on her nerves, to produce books called “The Rage and the Pride” and “The Force of Reason”, her “weapons of truth”.

The real enemy

It was a strange sort of truth. On every page, legitimate fears for democracy and liberty were laced with nonsense and bile. Moderate Islam, she wrote, did not exist. Islam was “a pool that never purifies”. All Muslims were bent on invading Europe and turning it into a “Eurabia” of veiled women and *sharia* law. Assimilation was a delusion; they did not want it. Already Miss Fallaci had heard the wailing of imams in the hills of Tuscany, and had seen Somali urine staining the Baptistery in Florence. Soon, she supposed, Muslim men would “shit in the Sistine Chapel”.

Anti-racism groups flew to indict her; defenders of free speech somewhat cautiously embraced her. Right-wing mayors of Italian towns gave her gold medals. Her books sold in the millions, and when she died she was delightedly facing trial for defaming a religion. Although she was an atheist, she had found a “soul-mate” in Pope Benedict XVI, and would have revelled in his unwise words about Islam.

For her, the enemy was always essentially the same: “fascism”, whether in the shape of Mussolini's black-shirts or Islamist suicide-bombers. But tyranny also appeared in another guise. Her real obsession, she admitted, was death.

They had tussled for a long time. Her great love, Alex Panagoulis, a leader of Greek resistance to the colonels, died in 1976 in a car crash possibly rigged by his enemies. She had lost his child in pregnancy. At 16 she chose a writer's life because typed words did not die, like talk, but stayed on the paper. She reported wars to express her hatred for man's mortality.

Her fight against “the Other One”, as she called her cancer, was a war like no other. She forbade her doctors to mention death; they were to talk to her about life. Reduced to taking only fluids, she would drink champagne. Nothing was allowed to diminish her energy for writing, cooking and leaping from her chair with a scream of “Mamma Mia!” at the folly of the world.

Yet her own death was not her chief concern. She mourned the slow death of Western civilisation, its lack of pride and self-esteem, its cowardice before the Muslim “hordes”. If terrorists were prepared to die for Islam, she would have the passion to oppose them. Her words carried the ring of deliberate provocation, challenging the Islamists to put a *fatwa* on her and raise a sword to behead her. In which case, before the bastards dared, she would toss back her hair, fix them with a glare and declare, in her best Italian snarl, “Fuck you.”

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Overview

Sep 21st 2006
From The Economist print edition

America's Federal Reserve held its benchmark interest rate at 5.25%, extending its pause for a second consecutive month after two years of tightening. The Fed said that the "moderation in economic growth appears to be continuing" and that "inflation pressures seem likely to moderate over time", but added that "some inflation risks remain."

Inflationary pressure in America eased. The annual rate of **consumer-price inflation** was 3.8% in August, down from 4.1% in July. Month on month, consumer prices rose by 0.2% in August, having increased by 0.4% in July. Core prices, which exclude the volatile categories of energy and food, increased by 0.2% for the second consecutive month.

The **American housing market** cooled further. Housing starts dropped by 6% in August compared with July and were 19.8% below their rate in August 2005. Confidence among homebuilders continued to fall. The National Association of Home Builders/Wells Fargo Housing Market Index fell for the eighth consecutive month in September, to its lowest level since 1991.

America's current-account deficit, the broadest measure of trade in goods, services and investment flows, widened to $218.4 billion, or 6.6% of GDP, in the second quarter.

Industrial production in the **euro area** fell by 0.4% in July compared with the previous month, thanks to weak production in France and Italy. Year-on-year growth in industrial output slowed to 3.2% in July, from 4.4% in June and 5.2% in May.

Spirits were low in **Germany**. The ZEW economic-sentiment indicator, based on a survey of analysts and institutional investors, fell by 16.6 points in September to -22.2, far below its historical average of 35. The decline is attributed to fears of weakening global demand, slowing private consumption and higher costs.

The annual rate of growth of **Britain's** broad money supply, M4, rose to 13.7% in the year to August, its fastest pace in almost 16 years. The money supply grew by 0.8% in August after expanding by 1% in July.

In **Japan** department-store sales in August were 0.9% lower than a year earlier. This was the fifth such monthly drop in a row. Clothing sales fell by 1.7% and sales of household products dropped by 3.2%, but food sales rose by 0.7%.

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Output, demand and jobs

Sep 21st 2006
From The Economist print edition

% change on year ago

	GDP latest		GDP qtr*	The Economist poll GDP forecasts 2006	2007	Industrial production latest		Retail sales (volume) latest		Unemployment % rate latest		year ago
Australia	+ 1.9	Q2	+ 1.3	+ 3.2	+ 3.3	– 1.0	Q1	+ 3.6	Q2	4.9	Aug	5.0
Austria	+ 3.0	Q2	+ 3.6	+ 2.4	+ 1.9	+ 6.2	Jun	+ 2.2	Jul	4.8	Aug	5.3
Belgium	+ 2.8	Q2	+ 3.1	+ 2.6	+ 1.9	+ 3.7	Jul	– 1.6	Jun	13.0	Jul†	13.4
Britain	+ 2.6	Q2	+ 3.1	+ 2.6	+ 2.5	– 0.5	Jul	+ 4.3	Aug	5.5	Jul‡	4.7
Canada	+ 2.9	Q2	+ 2.0	+ 3.1	+ 2.8	+ 0.4	Jun	+ 5.5	Jun	6.5	Aug	6.8
Denmark	+ 2.4	Q2	+ 7.8	+ 2.7	+ 2.3	+ 5.6	Jul	+ 3.4	Jul	4.4	Jul	5.8
France	+ 2.6	Q2	+ 4.7	+ 2.2	+ 2.0	+ 1.3	Jul	+ 5.5	Jul	8.9	Jul	9.9
Germany	+ 2.4	Q2	+ 3.6	+ 2.0	+ 1.3	+ 4.7	Jul	nil	Jul	10.6	Aug§	11.7
Italy	+ 1.5	Q2	+ 1.9	+ 1.5	+ 1.2	– 0.2	Jul	– 0.3	Jun	7.0	Q2	7.8
Japan	+ 2.5	Q2	+ 1.0	+ 2.8	+ 2.3	+ 5.1	Jul	– 1.0	Jul	4.1	Jul	4.4
Netherlands	+ 2.4	Q2	+ 4.0	+ 2.5	+ 2.2	+ 1.9	Jun	+ 4.6	Jun	5.4	Aug††	6.6
Spain	+ 3.7	Q2	+ 3.6	+ 3.3	+ 2.8	+ 5.0	Jul	+ 1.1	Jul	7.6	Jul	8.5
Sweden	+ 5.1	Q2	+ 5.4	+ 4.1	+ 2.9	+ 1.5	Jul	+ 7.8	Jul	5.7	Aug†	6.5
Switzerland	+ 3.2	Q2	+ 3.0	+ 3.0	+ 1.9	+ 4.3	Q4	+ 2.1	Jul	3.1	Aug†	3.6
United States	+ 3.6	Q2	+ 2.9	+ 3.4	+ 2.5	+ 4.7	Aug	+ 2.5	Jul	4.7	Aug	4.9
Euro area	+ 2.4	Q2	+ 3.6	+ 2.3	+ 1.8	+ 3.2	Jul	+ 2.5	Jul	7.8	Jul	8.6
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Finland	+ 6.6	Q2	+ 7.6	na	na	+12.5	Jul	+ 5.1	Jul	7.8	Aug	8.2
Greece	+ 4.1	Q2	na	na	na	+ 1.4	Jul	+10.1	Jun	9.7	Q1	10.4
Iceland	+ 2.8	Q2	na	na	na	na		na		1.4	Jul†	2.0
Ireland	+ 5.8	Q1	+ 4.4	na	na	+ 8.4	Jul	+ 5.5	Jul	4.4	Aug	4.4
Luxembourg	+ 7.3	Q1	na	na	na	– 1.4	May	– 4.8	Jun	4.1	Jul	4.0
New Zealand	+ 2.1	Q1	+ 2.3	na	na	– 0.7	Q1	+ 0.9	Q2	3.6	Q2	3.7
Norway	– 0.5	Q2	+ 1.9	na	na	– 2.9	Jul	+ 4.4	Jul	3.2	Jul**	4.7
Portugal	+ 0.9	Q2	+ 3.8	na	na	+ 1.3	Jul	+ 4.7	Jul	7.3	Q2†	7.2

*% change on previous quarter at an annual rate. †Not seasonally adjusted. ‡May-Jul; claimant count rate 3.0% in Aug.
§EU harmonised rate 8.2% in Jul. ††Jun-Aug. **May-Jul.

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Prices and wages

Sep 21st 2006
From The Economist print edition

% change on year ago

	Consumer prices			The Economist poll consumer prices forecast		Producer prices			Wages/earnings		
	latest		year ago	2006	2007	latest		year ago	latest		year ago
Australia	+ 4.0	Q2	+ 2.5	+ 3.2	+ 2.7	+ 9.9	Q2	+ 6.9	+ 4.7	Q2	+ 5.8
Austria	+ 1.8	Aug	+ 2.0	+ 1.9	+ 1.8	+ 3.9	Aug	+ 0.9	+ 2.7	Aug	+ 2.3
Belgium	+ 1.6	Aug	+ 3.1	+ 2.1	+ 1.9	+ 6.3	Jul	+ 1.9	+ 2.1	Jul	+ 2.5
Britain	+ 2.5	Aug*	+ 2.4	+ 2.2	+ 2.1	+ 2.6	Aug	+ 3.0	+ 4.4	Jul†	+ 4.1
Canada	+ 2.1	Aug	+ 2.6	+ 2.3	+ 2.1	+ 4.3	Jul	– 0.3	– 0.4	Jun	+ 1.6
Denmark	+ 2.0	Aug	+ 2.2	+ 2.0	+ 2.0	+ 4.3	Aug	+ 5.0	+ 3.2	Q2	+ 2.9
France	+ 1.9	Aug	+ 1.8	+ 2.0	+ 1.7	+ 3.9	Jun	+ 2.9	+ 3.1	Q2	+ 3.0
Germany	+ 1.7	Aug	+ 1.9	+ 1.8	+ 2.3	+ 5.3	Aug	+ 1.9	– 0.5	Jul	+ 1.3
Italy	+ 2.2	Aug	+ 2.0	+ 2.2	+ 1.9	+ 6.9	Jul	+ 3.6	+ 3.0	Jul	+ 2.8
Japan	+ 0.3	Jul	– 0.3	+ 0.4	+ 0.8	+ 3.4	Aug	+ 1.8	– 0.3	Jul	+ 2.5
Netherlands	+ 1.4	Aug	+ 1.8	+ 1.5	+ 1.6	+ 5.3	Jul	+ 5.3	+ 1.9	Aug	+ 0.8
Spain	+ 3.7	Aug	+ 3.3	+ 3.7	+ 3.0	+ 6.4	Jul	+ 4.6	+ 3.0	Q1	+ 2.5
Sweden	+ 1.6	Aug	+ 0.6	+ 1.5	+ 1.9	+ 3.7	Jul	+ 3.7	+ 3.8	Jun	+ 3.0
Switzerland	+ 1.4	Aug	+ 1.0	+ 1.3	+ 1.4	+ 3.1	Aug	+ 1.0	+ 1.0	2005	+ 0.9
United States	+ 3.8	Aug	+ 3.6	+ 3.5	+ 2.6	+ 3.7	Aug	+ 5.3	+ 3.9	Aug	+ 2.7
Euro area	+ 2.3	Aug	+ 2.2	+ 2.2	+ 2.1	+ 5.9	Jul	+ 4.1	+ 2.4	Q2	+ 2.5
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*										
Finland	+ 1.9	Aug	+ 1.0	na	na	+ 6.3	Aug	+ 3.8	+ 2.9	Q2	+ 3.7
Greece	+ 3.5	Aug	+ 3.7	na	na	+ 7.2	Jul	+ 5.1	na		na
Iceland	+ 7.6	Sep	+ 4.8	na	na	+11.4	Sep	+ 4.6	+10.2	Jul	+ 6.6
Ireland	+ 4.5	Aug	+ 2.3	na	na	– 0.2	Jul	+ 0.2	+ 2.2	Q1	+ 6.4
Luxembourg	+ 2.9	Jul	+ 2.6	na	na	+10.4	Jul	+ 5.5	+ 0.7	Jun	+ 2.0
New Zealand	+ 4.0	Q2	+ 2.8	na	na	+ 7.8	Q2	+ 4.7	+ 3.3	Q2	+ 2.6
Norway	+ 1.9	Aug	+ 1.9	na	na	+ 8.8	Aug	+19.9	+ 3.6	Q2	+ 3.8
Portugal	+ 2.0	Aug	+ 2.6	na	na	+ 4.9	Aug	+ 4.4	– 1.5	Jul	– 2.1

*RPI inflation rate 3.4% in Aug. †May-Jul.

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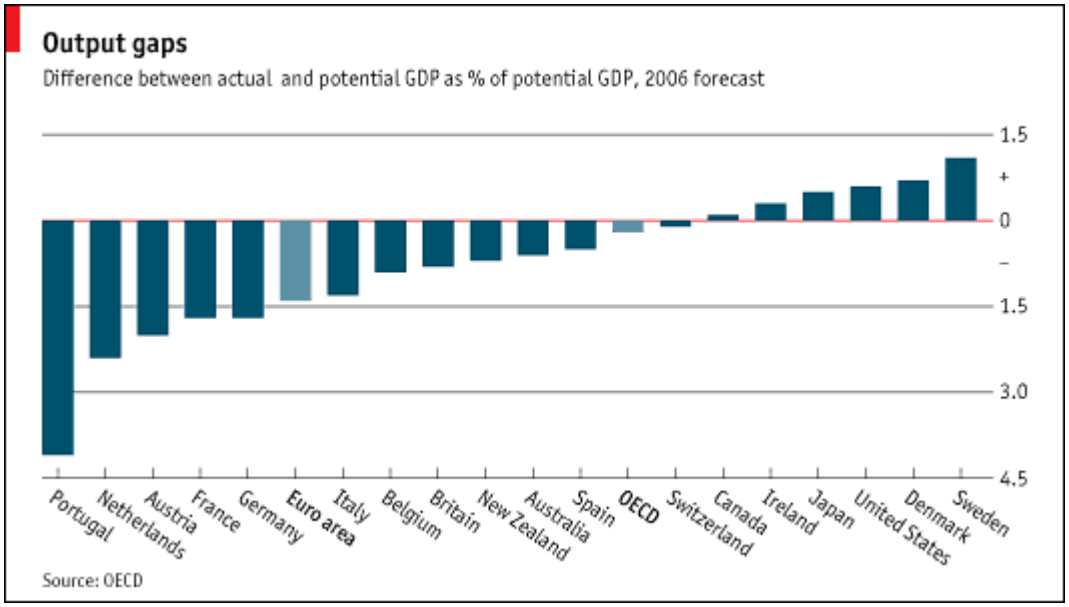
Output gaps

Sep 21st 2006
From The Economist print edition



The output gap is the difference between an economy's actual and potential GDP. Measuring potential GDP—which is the output consistent with full employment and stable inflation—is part science, part guesswork. Countries with positive output gaps produce beyond their potential and tend to have accelerating inflation. This year Ireland is the only country in the euro area with a positive output gap, according to the OECD.

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Money and interest rates

Sep 21st 2006
From The Economist print edition

	Money supply* % change on year ago			Interest rates % p.a. (Sep 20th 2006)					
				3-mth money market		2-year	10-year gov't bonds		corporate
	narrow	broad		latest	year ago	gov't bonds	latest	year ago	bonds
Australia	+ 9.4	+10.4	Jul	6.22	5.62	5.93	5.60	5.22	6.81
Britain	+ 5.1	+13.7	Aug	5.00	4.50	4.98	4.60	4.16	5.69
Canada	+15.5	+ 6.5	Jul	4.15	2.81	4.02	4.07	3.87	5.33
Denmark	+10.3	+ 7.4	Jul	3.45	2.20	3.70	3.76	2.96	5.13‡
Japan	+ 2.3	+ 0.5	Aug	0.34	0.02	0.62	1.65	1.37	1.87
Sweden	+ 0.5	+11.0	Jul	2.56	1.46	3.36	3.66	2.89	3.83
Switzerland	– 1.3	+ 1.9	Aug	1.75	0.75	2.02	2.44	1.79	2.61
United States	+ 0.2	+ 4.9	Jul	5.22	3.79	4.82	4.72	4.18	5.69
Euro area†	+ 7.4	+ 7.8	Jul	3.35	2.14	3.65	3.73	3.00	4.41

*Narrow: M1 except Britain notes and coin and Sweden M0, broad: M2 or M3 except Britain M4. †Germany for bonds. ‡New series. Benchmarks: US 30-year 4.85%, Japan No. 282 1.67%. Central bank rates: US fed funds 5.25%, ECB refinancing 3.00%, BOJ overnight call 0.25%, BOE repo 4.75%. Sources: Bank of Canada, Commerzbank, Danske Bank, Global Insight, JPMorgan Chase, Lehman Brothers, Stockholmsbörsen, UBS, Westpac, Thomson Datastream. Rates cannot be construed as banks' offers.

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The Economist commodity price index

Sep 21st 2006
From The Economist print edition

2000=100

	Sep 12th	Sep 19th*	% change on one month	% change on one year
Dollar index				
All items	170.4	170.6	– 1.5	+ 29.4
Food	132.7	135.7	+ 1.8	+ 11.4
Industrials				
All	219.1	215.7	– 4.1	+ 49.2
Nfa†	138.8	139.6	– 7.0	+ 3.9
Metals	262.9	257.2	– 3.2	+ 71.3
Sterling index				
All items	137.8	137.1	– 1.4	+ 23.8
Euro index				
All items	124.2	124.2	– 0.7	+ 24.0
Yen index				
All items	186.2	185.5	– 0.9	+ 36.1
Gold				
$ per oz	593.70	579.15	– 6.9	+ 24.3
West Texas Intermediate				
$ per barrel	63.76	61.65	–15.0	– 6.6

*Provisional. †Non-food agriculturals.

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Stockmarkets

Sep 21st 2006
From The Economist print edition

Market indices

	Sep 20th	2006 high	2006 low	% change on one week	% change on record high	% change on Dec 30th 2005 in local currency	% change on Dec 30th 2005 in $ terms
Australia (All Ordinaries)	4,962.5	5,318.2	4,708.8	– 0.3	– 6.7	+ 5.4	+ 8.3
Austria (ATX)	3,725.2	4,344.4	3,324.1	+ 0.8	– 14.3	+ 1.6	+ 9.4
Belgium (Bel 20)	4,022.0	4,022.0	3,445.1	+ 1.6	– 0.1	+13.3	+22.0
Britain (FTSE 100)	5,866.2	6,132.7	5,506.8	– 0.4	– 15.4	+ 4.4	+14.9
Canada (Toronto Composite)	11,635.4	12,487.3	10,904.3	– 1.2	– 6.8	+ 3.2	+ 6.9
Denmark (OMXCB)	372.4	395.5	325.0	+ 0.3	– 5.8	+ 1.2	+ 9.0
France (SBF 250)	3,651.2	3,755.6	3,244.2	+ 1.1	– 16.8	+10.6	+19.1
France (CAC 40)	5,192.7	5,312.2	4,615.4	+ 1.1	– 25.0	+10.1	+18.6
Germany (DAX)*	5,954.4	6,140.7	5,292.1	+ 0.8	– 26.2	+10.1	+18.6
Italy (S&P/MIB)	38,088.0	38,765.0	34,850.0	+ 0.3	– 24.0	+ 6.7	+14.9
Japan (Nikkei 225)	15,718.7	17,563.4	14,218.6	– 0.2	– 59.6	– 2.4	– 1.8
Japan (Topix)	1,570.2	1,783.7	1,458.3	– 0.8	– 45.6	– 4.8	– 4.2
Netherlands (AEX)	476.5	478.0	412.9	+ 1.1	– 32.1	+ 9.1	+17.5
Spain (Madrid SE)	1,352.3	1,352.3	1,156.8	+ 1.7	nil	+17.0	+25.9
Sweden (Affarsvarlden Gen)	325.3	333.7	275.2	+ 1.7	– 18.7	+10.9	+21.4
Switzerland (Swiss Market)	8,342.4	8,342.4	7,154.9	+ 1.5	– 0.8	+10.0	+16.0
United States (DJIA)	11,613.2	11,642.7	10,667.4	+ 0.6	– 0.9	+ 8.4	+ 8.4
United States (S&P 500)	1,325.2	1,325.8	1,223.7	+ 0.5	– 13.2	+ 6.2	+ 6.2
United States (NASDAQ Comp)	2,252.9	2,370.9	2,020.4	+ 1.1	– 55.4	+ 2.2	+ 2.2
Europe (FTSEurofirst 300)†	1,380.9	1,405.6	1,238.7	+ 0.8	– 19.0	+ 8.3	+16.6
Euro area (FTSE Euro 100)†	1,182.9	1,198.7	1,050.0	+ 1.0	– 23.7	+ 8.6	+17.0
World (MSCI)‡	1,359.4	1,406.3	1,243.9	+ 0.4	– 6.2	+ 8.1	+ 8.1
World bond market (Citigroup)††	646.6	652.0	612.1	+ 0.4	– 3.0	+ 4.2	+ 4.2

*Total return index. †In euro terms. ‡Morgan Stanley Capital International index includes individual markets listed above plus eight others, in $ terms. ††Citigroup World Government Bond Index, total return, in $ terms.

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Trade, exchange rates and budgets

Sep 21st 2006
From The Economist print edition

	Trade balance*, $bn latest 12 months	Current-account balance $bn latest 12 mths	Current-account balance The Economist poll % of GDP, forecast 2006	Current-account balance The Economist poll % of GDP, forecast 2007	Exchange rate trade-weighted† 2000=100 Sep 20th	Exchange rate trade-weighted† 2000=100 year ago	Currency units per $ Sep 20th	Currency units per $ year ago	Currency units per £	Currency units per euro	Currency units per ¥100	Budget balance % of GDP 2006‡
Australia	− 11.4 Jul	− 41.0 Q2	− 5.7	− 5.3	117.2	118.9	1.33	1.30	2.51	1.68	1.13	+ 0.9
Austria	− 1.3 Jun	+ 6.4 Q1	+ 0.5	+ 0.4	105.7§	104.8	0.79	0.82	1.49	–	0.67	− 1.9
Belgium	+ 15.7 Jul	+ 7.3 Mar	+ 1.5	+ 1.6	107.6§	106.5	0.79	0.82	1.49	–	0.67	− 0.4
Britain	−140.1 Jul	− 52.3 Q1	− 2.7	− 2.7	102.3	100.2	0.53	0.55	–	0.67	0.45	− 3.4
Canada	+ 58.8 Jul	+ 28.6 Q2	+ 2.3	+ 1.5	127.9	123.7	1.13	1.17	2.13	1.43	0.96	+ 2.2
Denmark	+ 8.2 Jul	+ 5.9 Jul	+ 2.0	+ 1.8	106.5	105.6	5.87	6.10	11.1	7.46	5.01	+ 3.3
France	− 33.2 Jul	− 36.3 Jul	− 1.7	− 1.4	108.4§	107.1	0.79	0.82	1.49	–	0.67	− 2.9
Germany	+185.8 Jul	+106.2 Jul	+ 3.6	+ 3.6	110.1§	108.5	0.79	0.82	1.49	–	0.67	− 3.1
Italy	− 21.4 Jun	− 34.3 Jul	− 1.7	− 1.5	108.0§	106.8	0.79	0.82	1.49	–	0.67	− 4.2
Japan	+ 78.0 Jul	+165.1 Jul	+ 3.6	+ 3.5	80.0	85.7	117	111	221	149	–	− 5.2
Netherlands	+ 39.0 Jul	+ 46.2 Q2	+ 6.0	+ 5.9	108.5§	107.2	0.79	0.82	1.49	–	0.67	− 0.5
Spain	−103.2 Jun	− 91.6 May	− 8.0	− 7.7	105.9§	105.1	0.79	0.82	1.49	–	0.67	+ 1.1
Sweden	+ 19.4 Jul	+ 24.1 Q2	+ 6.7	+ 6.0	98.3	95.8	7.27	7.65	13.7	9.23	6.20	+ 1.7
Switzerland	+ 8.2 Aug	+ 51.7 Q1	+12.7	+12.1	104.9	106.3	1.25	1.27	2.36	1.59	1.07	− 0.2
United States	−839.7 Jul	−838.1 Q2	− 6.7	− 6.7	83.9	84.6	–	–	1.89	1.27	0.85	− 3.6
Euro area	− 20.9 Jul	− 52.3 Jul	− 0.4	− 0.2	118.5	119.5	0.79	0.82	1.49	–	0.67	− 2.3
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Finland	+ 10.9 Jul	+ 11.8 Jul	na	na	109.2§	108.0	0.79	0.82	1.49	–	0.67	+ 2.2
Greece	− 39.2 Jun	− 25.1 Jul	na	na	105.0§	104.1	0.79	0.82	1.49	–	0.67	− 3.0
Iceland	− 2.0 Jul	− 3.4 Q2	na	na	85.6**	100.9	70.1	61.5	132	89.1	59.8	+ 2.0
Ireland	+ 38.1 Jul	− 5.6 Q1	na	na	113.9§	111.9	0.79	0.82	1.49	–	0.67	− 0.3
Luxembourg	− 5.1 Jun	+ 3.9 Q1	na	na	107.6§	106.5	0.79	0.82	1.49	–	0.67	− 1.7
New Zealand	− 4.6 Jul	− 10.2 Q2	na	na	129.7	136.5	1.51	1.43	2.85	1.92	1.29	+ 4.6
Norway	+ 59.8 Aug	+ 56.5 Q2	na	na	105.9	111.9	6.52	6.38	12.3	8.28	5.56	+ 18.5
Portugal	− 22.2 Jun	− 16.6 Jun	na	na	105.9**	105.0	0.79	0.82	1.49	–	0.67	− 5.0

*Merchandise. Australia, Britain, France, Canada, Japan and United States imports fob, exports fob. All others cif/fob. †Bank of England except §IMF, July average. ‡OECD forecast. **IMF, June average.

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The Economist industrials index

Sep 21st 2006
From The Economist print edition

Our industrials index has risen by 30% since January. However, the sub-index of agricultural prices has fallen back to where it began the year. Rubber prices have tumbled 36% since June. Timber is at a three-year low.

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Overview

Sep 21st 2006
From The Economist print edition

Argentina's GDP grew by 7.9% in the year to the second quarter; it rose by 8.8% in the year to the first.

Poland's inflation rate went up to 1.6% in August, from 1.1% in July. Industrial production rose by 12.5% in the year to August.

The inflation rate in **Malaysia** fell to 3.3% in August from 4.1% in July.

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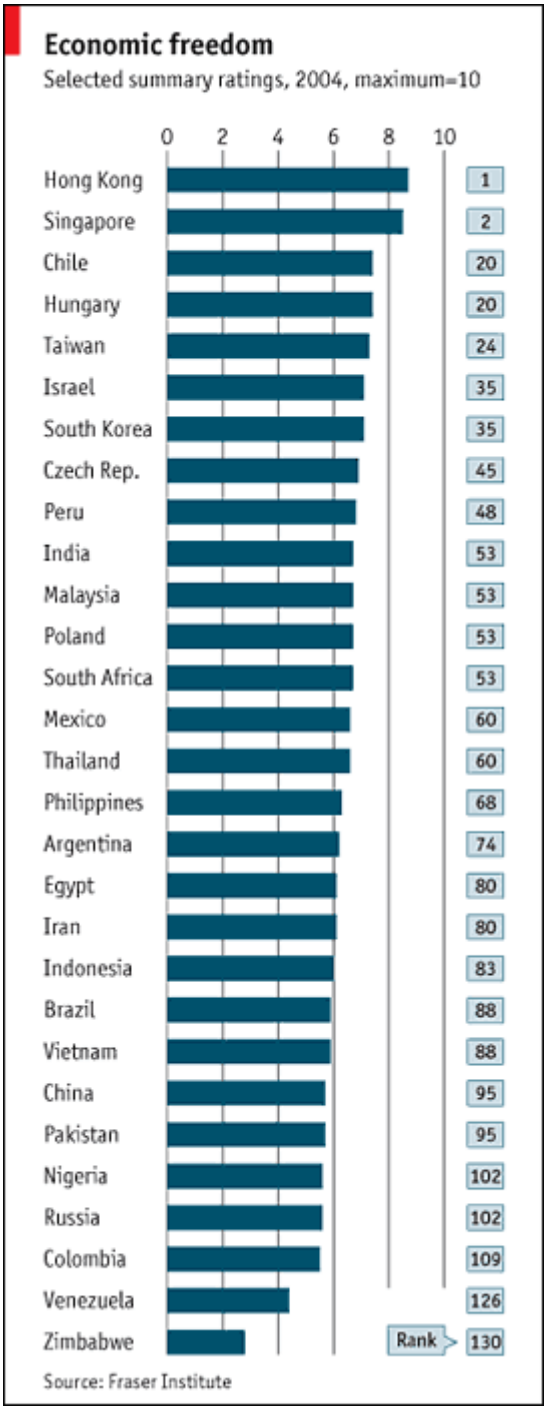
Economic freedom

Sep 21st 2006
From The Economist print edition

Hong Kong tops the list of 130 countries and territories in the Economic Freedom of the World Index, created by the Fraser Institute, a Canadian think-tank. The index measures how far a country's policies and institutions support property rights, competition and personal choice. Singapore ranks second. New Zealand, Switzerland and America are third equal. Zimbabwe is deemed the least-free economy.



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Economy

Sep 21st 2006
From The Economist print edition

	% change on year ago						Latest 12 months, $bn				Foreign reserves* $bn, latest	
	GDP		Industrial production		Consumer prices		Trade balance		Current account			
China	+11.3	Q2	+15.7	Aug	+ 1.3	Aug	+135.9	Aug	+160.8	2005	941.1	Jun
Hong Kong	+ 5.2	Q2	+ 5.3	Q2	+ 2.3	Jul	−14.2	Jul	+20.8	Q1	128.9	Aug
India	+ 9.3	Q1	+12.4	Jul	+ 6.7	Jul	−41.3	Jul	−10.6	Q1	158.0	Aug
Indonesia	+ 5.2	Q2	+ 1.0	Jun	+14.9	Aug	+34.7	Jul	+ 3.8	Q1	38.5	Jun
Malaysia	+ 5.9	Q2	+ 7.3	Jul	+ 3.3	Aug	+28.0	Jul	+19.5	Q1	78.8	Jul
Pakistan	+ 6.6	2006†	+14.3	Jun§	+ 8.9	Aug	−12.5	Jul	− 5.0	Q2	11.6	Jun
Philippines	+ 5.5	Q2	− 4.3	Jun	+ 6.3	Aug	− 3.8	Jun	+ 2.9	Mar	18.6	Aug
Singapore	+ 8.1	Q2	+19.6	Jul	+ 1.1	Jul	+32.6	Aug	+38.3	Q2	130.7	Aug
South Korea	+ 5.3	Q2	+ 4.4	Jul	+ 2.9	Aug	+16.0	Aug	+ 6.0	Jul	227.0	Aug
Taiwan	+ 4.6	Q2	+ 4.8	Aug	− 0.6	Aug	+19.4	Aug	+20.6	Q2	261.0	Aug
Thailand	+ 4.9	Q2	+ 6.1	Jul	+ 3.8	Aug	− 2.3	Jul	+ 2.8	Jul	57.1	Jul
Argentina	+ 7.9	Q2	+ 7.6	Aug	+10.7	Aug	+11.5	Jul	+ 6.7	Q1	25.1	Jul
Brazil	+ 1.2	Q2	+ 3.2	Jul	+ 3.8	Aug	+46.1	Aug	+12.5	Jul	66.1	Jul
Chile	+ 4.5	Q2	+ 1.9	Jul	+ 3.8	Aug	+18.5	Aug	+ 2.2	Q2	16.3	Aug
Colombia	+ 6.0	Q2	+10.0	Jun	+ 4.7	Aug	+ 0.8	Jun	− 2.0	Q1	14.9	Aug
Mexico	+ 4.7	Q2	+ 5.8	Jul	+ 3.5	Aug	− 4.1	Jul	− 0.6	Q2	83.0	Jul
Peru	+ 9.0	Jul	+ 5.6	Jul	+ 1.9	Aug	+ 6.9	Jul	+ 1.3	Q2	14.3	Aug
Venezuela	+ 9.2	Q2	+13.7	May	+14.9	Aug	+37.2	Q2	+29.5	Q2	23.8	Jun
Egypt	+ 5.9	Q1	+ 4.0	2005†	+ 8.9	Aug	−11.2	Q1	+ 2.1	Q1	23.2	Aug
Israel	+ 6.2	Q2	+13.4	Jul	+ 2.2	Aug	− 7.9	Aug	+ 5.8	Q2	28.1	Aug
Saudi Arabia	+ 6.6	2005‡	na		+ 2.1	Jun	+126.5	2005	+90.7	2005	22.8	Jul
South Africa	+ 3.6	Q2	+ 5.8	Jul	+ 5.0	Jul	− 7.9	Jul	−11.7	Q1	21.9	Aug
Czech Republic	+ 6.2	Q2	+11.8	Jul	+ 3.1	Aug	+ 1.6	Jul	− 3.8	Q2	30.7	Aug
Hungary	+ 3.8	Q2	+12.2	Jul	+ 3.5	Aug	− 3.3	Jul	− 7.9	Q1	20.8	Aug
Poland	+ 5.5	Q2	+12.5	Aug	+ 1.6	Aug	− 3.2	Jul	− 4.9	Jul	16.3	Jul
Russia	+ 7.4	Q2	+ 5.6	Aug	+ 9.7	Aug	+139.6	Jul	+91.4	Q2	252.2	Aug
Turkey	+ 7.5	Q2	+ 9.5	Jul	+10.3	Aug	−50.1	Jul	−29.6	Jul	57.0	Jul
MORE COUNTRIES	Data for the countries below are not provided in printed editions of *The Economist*											
Estonia	+12.0	Q2	+ 7.6	Jul	+ 5.0	Aug	− 2.7	Jun	− 1.8	Jun	2.1	Jun
Latvia	+10.9	Q2	+ 3.9	Jul	+ 6.8	Aug	− 3.6	Jun	− 2.6	Jun	3.2	Jun
Lithuania	+ 7.7	Q2	na		+ 4.2	Aug	− 4.2	Jul	− 2.2	Jun	4.1	Jun
Slovakia	+ 6.2	Q2	+ 8.3	Jul	+ 5.1	Aug	− 2.9	Jun	− 4.6	May	15.5	Jun
Slovenia	+ 4.9	Q2	+ 7.1	Jul	+ 3.2	Aug	− 1.8	Jul	− 0.3	Jun	8.6	May

*Excluding gold, except Singapore and China; IMF definition. †Year ending June. ‡Economist Intelligence Unit estimate. §New series.

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Reuters; WM/Reuters; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; Bank Leumi le-Israel; Standard Bank Group

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Financial markets

Sep 21st 2006
From The Economist print edition

	Currency units			Interest rates	Stockmarkets	% change on		
	per $		per £	short-term	Sep 20th		Dec 30th 2005	
	Sep 20th	year ago	Sep 20th	% a year		one week	in local currency	in $ terms
China	7.93	8.09	15.0	3.40	1,820.8	+2.5	+ 49.1	+ 51.8
Hong Kong	7.79	7.76	14.7	4.15	17,513.0	+1.8	+ 17.7	+ 17.2
India	46.0	43.9	86.9	6.46	12,109.1	+1.8	+ 28.8	+ 26.2
Indonesia	9,168	10,215	17,320	11.72	1,479.3	+1.9	+ 27.2	+ 36.6
Malaysia	3.68	3.77	6.95	3.85	959.6	+0.6	+ 6.6	+ 9.5
Pakistan	60.6	59.9	114	10.07	10,032.6	+0.4	+ 5.0	+ 3.6
Philippines	50.2	56.3	94.7	7.31	2,512.8	+5.6	+ 19.9	+ 26.8
Singapore	1.59	1.68	2.99	3.44	2,531.4	+0.9	+ 7.8	+ 13.1
South Korea	951	1,030	1,796	4.65	1,366.4	+2.5	- 0.9	+ 5.3
Taiwan	32.9	33.1	62.2	1.81	6,877.8	+3.2	+ 5.0	+ 4.8
Thailand	37.8	41.0	71.4	5.35	702.6**	+0.6	- 1.6	+ 6.8
Argentina	3.10	2.91	5.85	10.19	1,660.9	+0.7	+ 7.6	+ 5.1
Brazil	2.16	2.29	4.09	14.17	35,196.0	- 0.9	+ 5.2	+ 13.6
Chile	538	535	1,016	5.16	10,494.8	+4.3	+ 14.0	+ 8.5
Colombia	2,399	2,293	4,533	6.32	9,183.8	- 3.9	- 3.5	- 8.0
Mexico	10.9	10.8	20.7	7.05	21,841.5	+5.3	+ 22.7	+ 19.4
Peru	3.24	3.30	6.13	4.50	10,091.9	+2.2	+110.1	+122.2
Venezuela	2,729§	2,754§	5,157	10.29	35,069.5	nil	+ 72.0	+ 62.9
Egypt	5.74	5.77	10.85	9.21	56,564.4	+5.2	+ 2.2	+ 2.1
Israel	4.33	4.58	8.18	5.73	835.4	+1.9	+ 0.9	+ 7.3
Saudi Arabia	3.75	3.75	7.09	5.22	11,108.4	- 1.2	- 33.5	- 33.5
South Africa	7.39	6.37	14.0	8.20	21,627.4	+1.4	+ 19.5	+ 2.5
Czech Republic	22.4	24.1	42.3	2.54	1,445.0	- 1.3	- 1.9	+ 7.9
Hungary	215	202	407	7.80	22,153.3	- 2.9	+ 6.6	+ 5.9
Poland	3.11	3.18	5.88	4.22	44,176.6	- 1.4	+ 24.1	+ 29.9
Russia	26.8	28.4	50.6	11.50	1,554.3‡	- 0.1	+ 28.6	+ 38.1
Turkey	1.47	1.34	2.78	19.74	38,275.0	+1.3	- 3.8	- 11.5
EM (MSCI)*	1.00	1.00	1.89	na	777.8	+1.0	+ 10.1	+ 10.1
EMBI+†	1.00	1.00	1.89	na	389.7	+0.7	+ 5.7	+ 5.7

*Emerging Mkts. †JPMorgan Chase's Emerging Mkts Bond Index Plus. ‡In $ terms. §Trading market value. **19th Sep

Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Reuters; WM/Reuters; Hong Kong Monetary Authority; Centre for Monitoring Indian Economy; Bank Leumi le-Israel; Standard Bank Group

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